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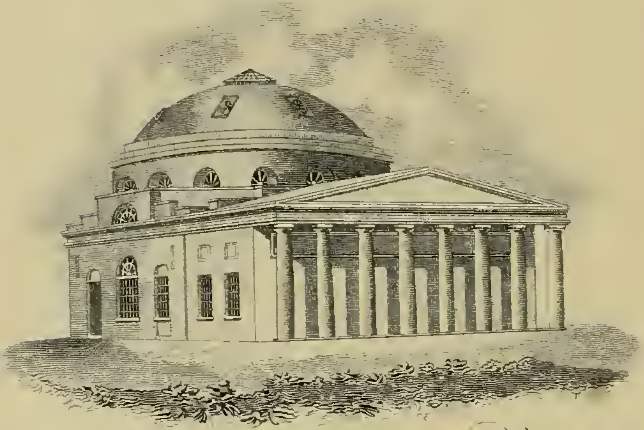

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AN ATTEMPT TO ESTABLISH COLLATERAL CIRCULATION TO THE MYOCARDIUM

Preliminary Report*†

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Interest in enriching the blood supply of the myocardium was shown by Beck et al (1, 2, 3, 4, 5) in 1932 and in the ensuing decade. By connecting various extra-cardiac tissues to abraided epicardial surfaces, inducing an inflammatory reaction in the cardiac serosa, or producing extensive pericardial adhesions, collateral blood channels were introduced to the myocardium. Later in the same decade, Gross, Blum, and Silverman (6) attempted to improve blood flow through the heart muscle by ligating the coronary sinus. It was believed that such an obstruction would lead to dilation of accessory channels and improve the coronary circulation. This result of course, would be dependent upon the patency of the arterial side of the circulation. The work of Beck and Mako (7) with this procedure showed coronary sinus ligation to be beneficial but not satisfactory for clinical application. Early in 1946, Beck, Stanton, Batiuchok, and Leiter (8) implanted a shunt from the aorta to the coronary sinus. This procedure was complicated by thrombosis. The time required for the operation was three to five hours. The operative technique was difficult. However, a definite improvement in cardiac circulation resulted as shown by ligation of the descending ramus of the left coronary artery without serious myocardial embarrassment.

The method reported in this paper is essentially a revival of one developed by Lezius (9) in 1937 and herein modified. A study of the effectiveness of the Lezius procedure has been recently reported by Carter (10) et al. The procedure is operatively easy. It may be completed in less than fifty minutes. Post operative complications are minimal. The mobility of the heart is not limited, the pericardial sac is

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largely preserved, and scarring at the operative site is negligible. Nothing antiphysiologic such as coronary sinus obstruction or arterio-venous shunt is introduced. In our procedure, a mobile portion of lung was selected which could be easily laid over the apex of the heart. An area having a diameter at least equal to one third the left border of the heart from the auriculoventricular sulcus to the apex was denuded by stripping the visceral layer of pleura from the lung. When this was done insignificant hemorrhage occurred and bronchioles were opened from which air freely bubbled. In no case, did interstitial emphysema occur nor did the bronchial communication interfere with union between the lung and heart. After incising the pericardium transversely, epicardium over the apex of the heart equal in area to the bare zone prepared on the lung was stripped away after raising a bleb with a 0.9 per cent solution of sodium chloride. The denuded area of lung was applied to the denuded area of heart and held securely by six equidistant sutures through the pleura and epicardium. Every effort was made to remove all serosal cells from these areas. In our opinion, interposing serosal cells being capable of rapid regeneration may multiply and act as a barrier to developing collateral capillary buds. In addition, contraction occurring with aging of the scar tissue would constrict the collaterals which may have developed. The pleura and pericardium were therefore stripped away rather than the surfaces scarified which necessarily would leave an abundance of mesothelial cells to develop into a barrier to developing collateral vessels.

OPERATIVE TECHNIQUE

The dog was anesthetized by intravenous nembutal. Respiration was maintained by a mechanical respirator via an endotracheal tube.

While observing an aseptic technique, the thorax was opened through the left fifth interspace. The vagus nerve was identified and infiltrated with 1 per cent procaine. Two "000" silk traction sutures were placed side by side in the lower pericardium anterior to the phrenic nerve. The pericardium was then transversely incised. As the incision was extended posteriorly, the phrenic nerve was freed from the pericardium and retracted dorsally.

The distance from the apex of the heart to the coronary sulcus was measured and at least one-third of this distance was arbitrarily chosen as the diameter of the graft.

The anterior border of the lower lobe of the left lung was then pulled out into the wound and grasped on its medial edge with clamps and reflected to the left over the fingers. Thus the under surface of the lung was exposed and kept taut and flat. The serosa on the inverted surface was then removed as in cutting a Thiersch graft. A double edged razor blade was held by a clamp and laid almost flat against the lung. By slicing back and forth the serosa was removed with as little parenchyma as possible. Bleeding was minimal. Occasionally a small bronchiole was opened. The denuded lung area was covered with moist gauze and returned into the pleural cavity.

The heart was again exposed and a traction suture of "0" silk was placed through the apex of the left ventricle. By gentle traction of this suture, it was possible to pull the heart out of the pericardial sac and support it in the fingers.

The epicardium was separated from the myocardium by carefully inserting a twenty-five gauge needle immediately under the epicardium and raising it from the myocardium with physiologic saline solution. This raised portion of the epicardium was grasped with fine forceps and the cleavage plane was further developed by blunt mosquito clamp dissection. The desired area was enlarged by extending the dissection outward in all directions. The freed edges of the epicardium were trimmed away with scissors.

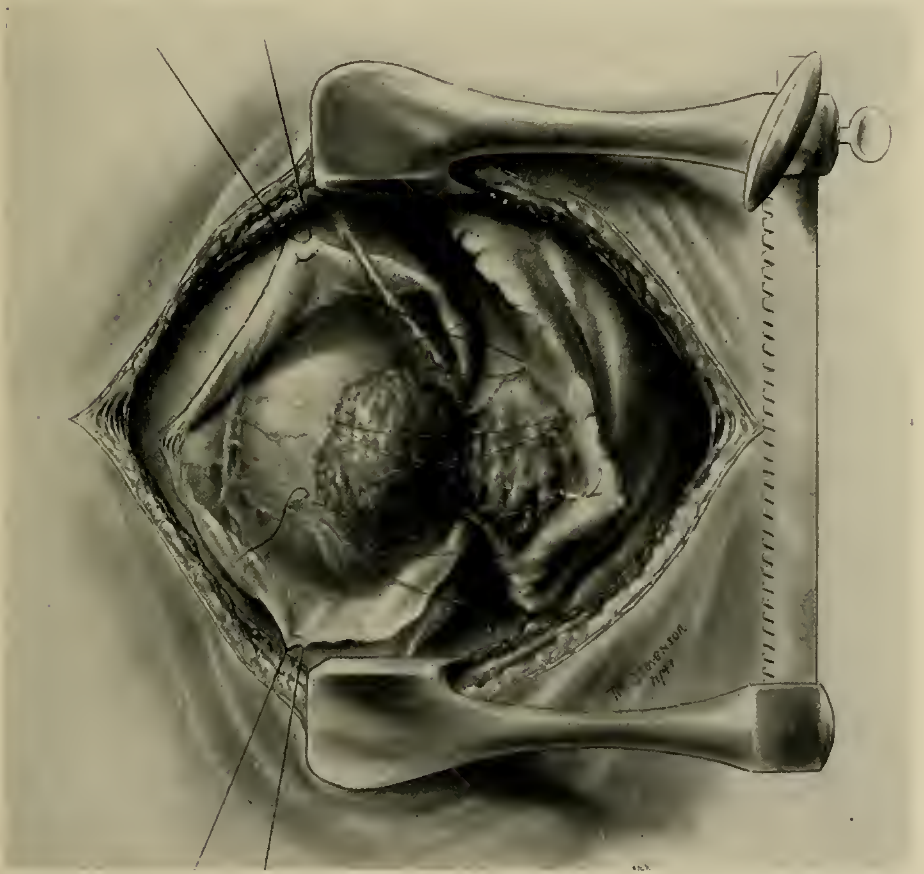


Fig. 1

As the dogs were assumed to be normal, a physiologic need for blood in the myocardial area was produced in some of the animals by tying off three or four coronary twigs with fine silk ligatures.

The lung lobe which had been stripped of its serosa was next pulled over to the heart by six equally spaced "0000" silk sutures. Each suture was placed first in the edge of the lung serosa and then in the heart to pick up the freed edge of epicardium (Fig. 1). After the last suture was inserted the sutures were drawn securely and tied.

The heart was replaced in the pericardial sac and held in position by crossing the two pericardial traction sutures. This pulled the pericardium over the graft. The defect in the pericardium was partially repaired with a fine continuous silk suture taking care not to strangulate the graft pedicle. The lung was inflated and the chest was closed in a routine manner.

EXPERIMENTAL DATA

Dog 1. This first animal underwent a modified cardiopneumopexy as described above. Two tertiary twigs of the anterior descending branch of the left coronary artery were ligated to establish need. During stripping of the epicardium, the myocardium was inadvertently lacerated to the extent of 1.5 cm. At the end of the operative period, right axis deviation was observed which had not been noted on the control electrocardiographic tracing. This animal recovered almost normal activity in 48 hours.

One hundred and seventy-six days from the first operation the dog was again subjected to a thoracotomy. The anastomosis was well healed. Close approximation of the heart and lung had been accomplished. Subsequent microscopic study revealed minimal loose fibrous tissue existing between the two organs (Fig. 2). The anterior descending ramus of the left coronary artery was securely tied. The myocardium became moderately cyanotic but this disappeared in twenty minutes. The rate, volume, and rhythm of the heart remained normal for one hour. There were no significant changes in the electrocardiograph. There were no systemic signs of failure. At the end of a sixty minute period the animal was sacrificed.

The heart, lungs, and great vessels were removed en masse. Latex, injected into the left coronary artery distal to the ligation traversed the coronary field and entered pulmonary vessels.

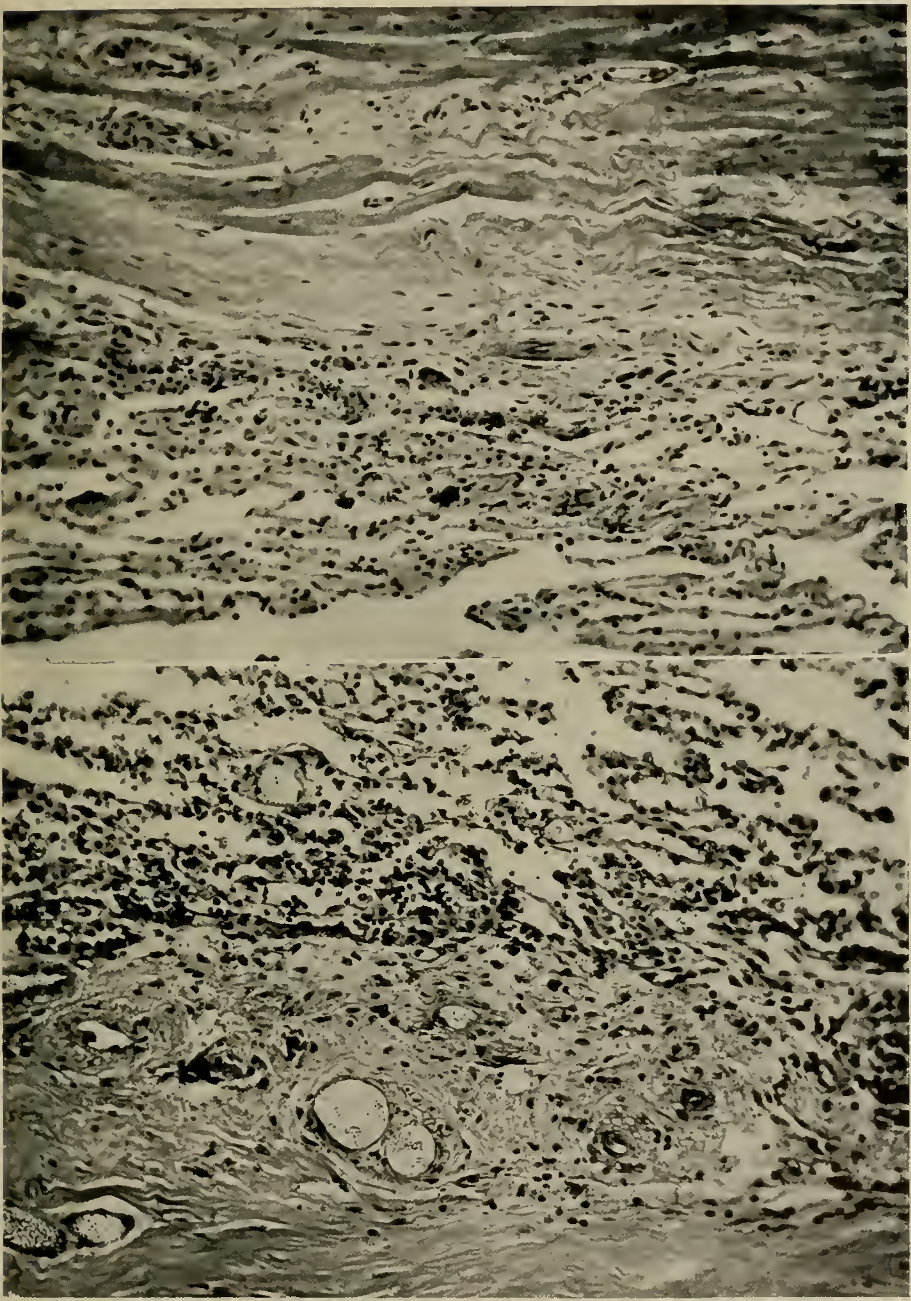
Dog 2. Before subjecting the second animal to a modified cardiopneumopexy, a secondary and tertiary branch of the anterior descending branch of the left coronary and the distal fourth of the circumflex branch were ligated. This circulatory occlusion was followed by cyanosis of the myocardium and the appearance of low voltage of the QRS complex in LI. The dog, however, did endure the further operative trauma of uniting the bare areas prepared on the heart and lung. The postoperative course of this animal was uneventful.

One hundred and ninety days after the above operation, the anastomosis was found to be well healed. At this operation the remainder of the anterior descending ramus of the left coronary artery was ligated. Following this ligation the heart rate, rhythm, and intensity remained normal except for transient auricular extrasystoles shown by electrocardiograph. Two hours later the electrocardiograph was normal.

After forty-two additional days the animal was again operated upon. At this time the engrafted lung was clamped and divided leaving a tuft of lung attached to the heart. This procedure did not influence the heart function. The pericardium was separated from the lung graft and the clamp was removed. From this piece of lung which had been completely separated from its natural source of blood supply, active arterial, venous, and capillary bleeding occurred. This is offered as evidence of direct communication between the pulmonary and cardiac vascular systems.

Dog 3. This animal was considered a poor operative risk because of profound malnutrition and distemper. In spite of this, a cardiopneumopexy was completed without untoward results. The animal recovered promptly from the operation. Death, resulting from distemper, occurred on the fourteenth day. At autopsy the operative site was found to be thoroughly bridged by vascularized connective tissue.

Dog 4. A cardiopneumopexy was performed without complications on this dog. Six sutures between lung and heart were placed at the periphery of the anastomoses and two in the center. The latter two were used to keep the heart and lung surfaces in close contact. After subsequent examination the two central sutures were judged to be of no advantage. There were no coronary radicles ligated at this stage.



Dog 5

Fig. 2. Above Dog. 1; Below Dog 5. Attachment between heart and lung. Note barium sulphate in pulmonary and coronary vessels in Dog 5. Hematoxylin and eosin stain × 200.

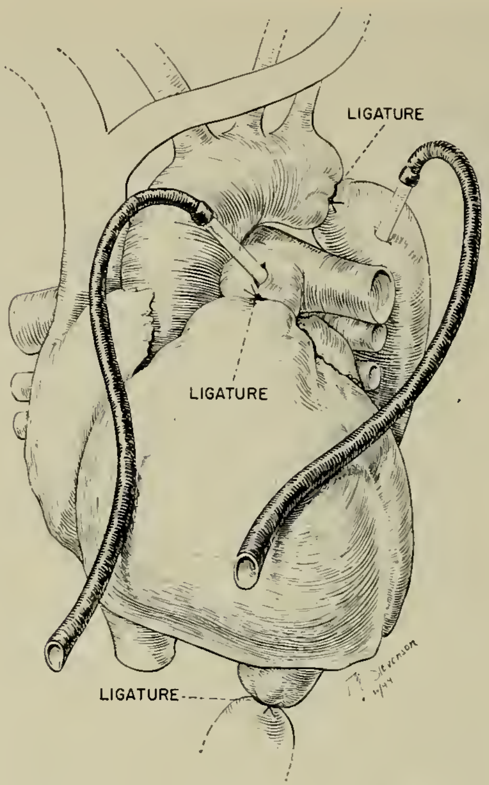


Fig. 3

Whether this anastomosis would protect the heart from the effects of coronary occlusion was tested seventy days later. At that time, one half the anterior descending branch of the left coronary artery was ligated. Twenty minutes later the other half of the anterior descending branch was occluded. Neither occlusion caused disturbance in rate, rhythm, or volume. Diminution of the QRS amplitude and depression of the ST segments in all leads were noted. Forty-five minutes later the animal was heparinized, bled, and irrigated intravenously with saline. The heart, lungs, and trachea were then removed together. Injection of the pulmonary artery with barium sulfate suspension failed to reveal radiopaque channels in the myocardium. The injection method was techniqally poor so collaterals could have been missed. It is also to be noted that this animal's coronary system had been left intact until the day of autopsy so that need for collateral development was absent. Study of sections across the line of anastomosis showed intimate union of the heart and lung with little scar tissue intervening.

Dog 5. A cardiopneumopexy was performed on this animal with little difficulty. The bare area on the lung was made slightly smaller than the bare area on the heart. This procedure necessitated slight stretching of the lung which compelled close apposition of the anastomosed surfaces. This practice is recommended in all procedures of this type.

The efficacy of the operation was examined twenty-four days later. The operative site was well healed. Beside the cardiopneumopexy, there were no unnatural findings. The junction between the united heart and lung was marked by a delicate line of loose connective tissue. The anterior descending branch of the left coronary artery was abruptly occluded less than 1 cm. below its origin. Also one-half the circumflex ramus was ligated. Again, the rate, rhythm and volume of the heart remained normal after sudden obstruction of a major coronary artery. The animal recovered from this procedure in 36 hours.

Seventy-nine days after occluding the arteries mentioned above, the animal was heparinized and bled. The cardiopulmonary anastamosis was found to be well healed. Scarring at the line of union was minimal. The ligated coronary arteries were found to be completely occluded by hyalinized thrombi. A suspension of slowly settling barium sulfate was used to inject the pulmonary artery and bronchial arteries in such a way that barium sulfate could enter the myocardium only through the lung graft (Fig. 3).

The injection was made under 100 mm. of mercury pressure. The passage of barium sulfate through the lung graft and over the myocardial surface could be observed grossly. Upon sectioning the left ventricular wall a healed infarct was found that measured 3 cm. x 2 cm. Well preserved muscle representing the outer half of the normal myocardial thickness was discovered. Sections across the anastomosis studied microscopically demonstrated many barium sulfate filled vascular channels in both the lung and myocardium.

Dog 6—This animal underwent a cardiopneumopexy without mishap. It was possible to strip the epicardium without first infiltrating with saline, but with greater difficulty. Approximately twelve hours later the dog died of atelectasis of the right lung. The left lung was properly inflated. The anastomosis was secure.

SUMMARY

1. A surgical method of relieving myocardial ischemia is presented.
2. In the opinion of the authors, this method offers advantages over previously existing similar methods.
3. Clinical application of this surgical procedure is now under investigation.

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PRESENT STATUS OF AUREOMYCIN AND CHLORAMPHENICOL THERAPY*

THEODORE E. WOODWARD, M.D., ROBERT E. BAUER, M.D., ROBERT T. PARKER M.D., AND HOWARD E. HALL, M.D.

Aureomycin and chloromycetin, the two new streptomyces-derived antibiotics, have greatly extended specific therapy in the group of infectious diseases. Within a brief period of 20 months they have not only successfully combated certain important human infections caused by most gram-negative and a few gram-positive bacilli, but have shown themselves to be highly specific in all members of the rickettsial group, and furthermore, have significant effects on a few of the viral-like agents of disease. In this summary discussion, a complete bibliography will not be given, suffice it to say that many investigative groups have contributed to the ever increasing knowledge of these two antibiotic substances (1, 2, 3, 4). It is noteworthy that the therapeutic results obtained have been amazingly similar, with certain notable exceptions, from the point of view of range of activity, specificity of action, uniformity of response and lack of significant toxic effects. Each antibiotic may be administered orally, satisfactory blood levels are obtained within 30 minutes, and adequate concentrations are obtained in the urine and spinal fluid.

RICKETTSIAL DISEASES

Both antibiotics are strikingly effective in all experimental rickettsial infections. Results obtained in treatment of patients with Rocky Mountain spotted fever, scrub typhus, murine typhus and rickettsiapox are highly specific and similar. Indeed, there is rapid amelioration of the clinical symptoms with return of temperature to normal in about 2.5 days. Of equal significance is the ability of the antibiotics to exert favorable influence when started late in the course of disease. Chloramphenicol has been found effective in epidemic typhus fever, whereas aureomycin has proved of great benefit in patients with Q-fever. Based on the not yet complete clinical evidence it appears that each drug is equally effective in rickettsial infections. Treatment should be continued until temperature has been normal for 1 day. Their mechanism of action is thought to be rickettsiostatic. The typical response of a patient with Rocky Mountain spotted fever following treatment with chloramphenicol is illustrated by Case 4 whose findings are graphically presented in Figure 1.

GRAM-NEGATIVE ORGANISMS

Major bacterial disease of the gram-negative group have been treated successfully. Chloramphenicol is unequivocally the drug of choice in typhoid fever. The U. S. Army Scrub Typhus Team and the University of Maryland studying this disease in Malaya has extended the original series of ten to approximately 50 cases and observed practically identical favorable results. Other investigators confirmed these findings. The typhoid patient improves within 48 hours and the temperature returns to normal on an average of three and one-half days. In the 50 above-mentioned patients there was a relapse rate of 53 per cent when treatment was less than 8 days. Treatment for 2 weeks largely obviates this complication. Further studies are in progress. In spite of specific treatment complications of hemorrhage and perforation have been observed which emphasizes the need for continued supportive care. Limited clinical results in other Salmonella infections are not as striking as in typhoid. The clinical course of a patient with typhoid fever treated with chloramphenicol is graphically represented in Figure 2.

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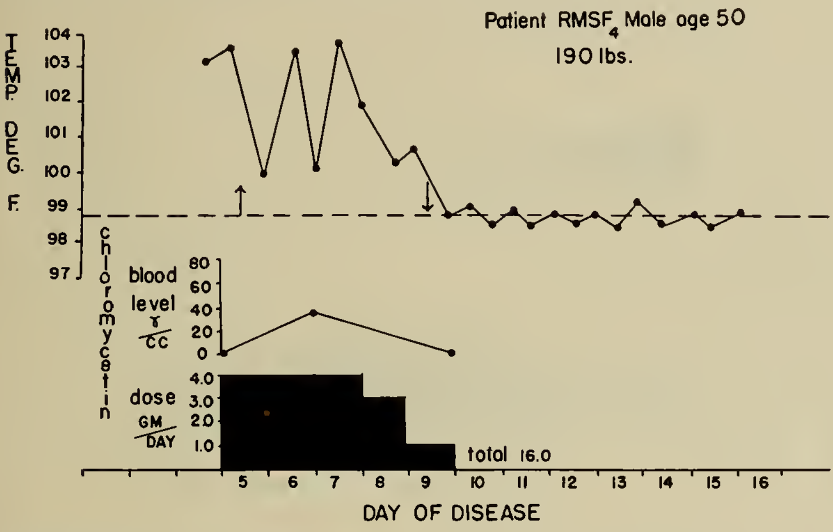
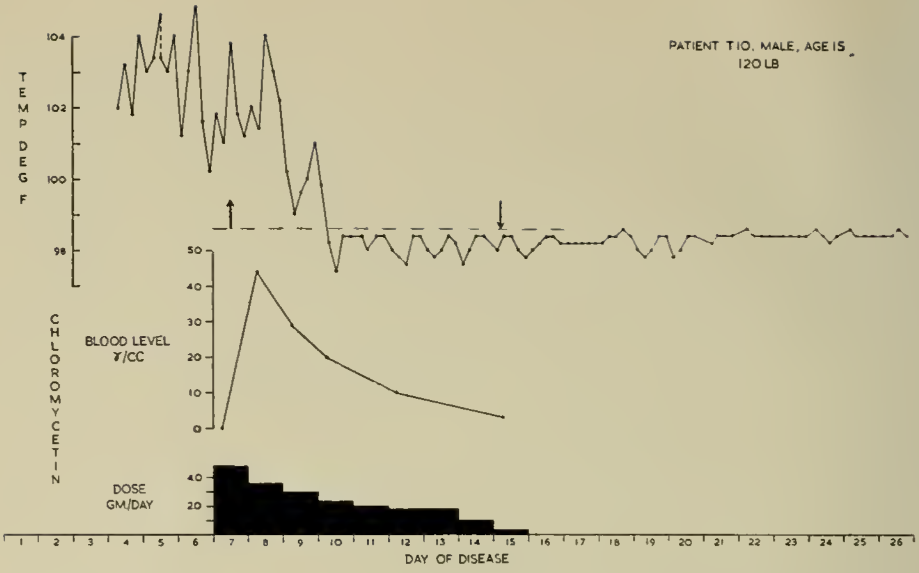
* Summary discussion of paper, with certain revisions, read before New York Academy of Medicine Nov. 3, 1949. From the Section of Infectious Diseases, Department of Medicine, School of Medicine, University of Maryland, Baltimore, Maryland.



Rickettsiemia	+	
complement fixation	1/8 1/32 1/32	
Proteus ox 19	0	1/640 32ND DAY
W.B.C. thousands	6.1 10.05 5.0	

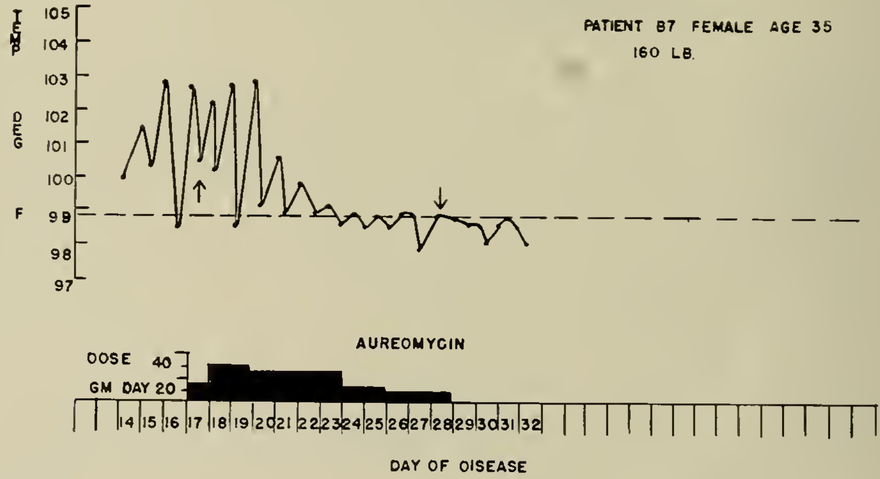
FIG. 1. (Case 4). Rocky Mountain spotted fever. Chloramphenicol. Course of Rocky Mountain spotted fever in a 50 year old man who received 16 grams of Chloramphenicol for 3½ days. Toxemia was rapidly reduced and the convalescence was uneventful.

Both chloramphenicol and aureomycin appear to be equally effective in acute brucellosis of all types. Symptoms are promptly relieved and the temperature returns to normal in about 3 to 5 days. Relapses have occurred with either antibiotic, but the emergence of bacterial resistant strains is uncommon and retreatment is equally beneficial. Reports of the use of combinations of antibiotics are appearing. Patients with proved chronic brucellosis are helped by treatment. Final evaluation of antibiotic treatment of brucellosis, a disease so variable in its clinical manifestations, is not yet possible, but the current results in the acute infection are very encouraging. The febrile response to treatment with aureomycin in a patient with acute brucellosis is typified in Figure 3.



E TYPHOSA CULTURE		
	BLOOD	+ + 0 0
	URINE	0 0 0 0
	STOOL	0 0 0

FIG. 2. (Case T10). Typhoid Fever. Chloramphenicol. Typical course of typhoid in a patient first treated on the 7th day of illness. (Courtesy U. S. Army Scrub Typhus Team.)

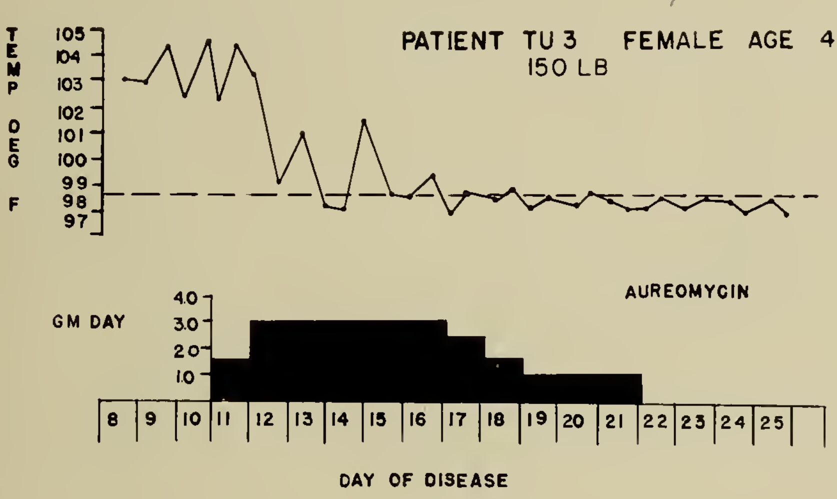


BLOOD CULTURE	+ 0 0 0
AGGLUTINATION	1/320 1/640 1/1280
SPLEEN	0 0 0 0 0 0 0 0 0

FIG. 3 (Case B7). Brucellosis, Aureomycin. Response to aureomycin in a 35 year old woman with brucellosis of abortus type. Diagnosis confirmed by positive blood culture and rising titer of agglutinins. (Reprinted from Ann. Int. Med. **31**: 53 1949).

Various investigators report the favorable response of patients with tularemia to aureomycin in a manner comparable to that afforded by streptomycin. Unpublished work by members of this department (Parker, Lister et al.) reveals that chloramphenicol is moderately beneficial in experimentally infected mice. Five human cases with tularemia have been effectively treated with this antibiotic. The course of illness in a patient with tularemia treated with aureomycin is detailed in Figure 4.

The available data pertaining to experimental H. influenzal infections and in clinical meningitis caused by this organism is favorable to aureomycin. Additional unpublished data from this laboratory (McCrumb, et al.) indicates that chloramphenicol is likewise effective. Mice experimentally infected with H. influenzae are protected when chloramphenicol is introduced intramuscularly. Two infants ill with this disease rapidly improved after treatment with chloramphenicol.



B TULAREUSE CULTURE	SPUTUM	+
	BLOOD	0
AGGLUTINATION		1/40 1/1280
W.B.C		10,100 5,050

FIG. 4 (Case TU3). Tularemia, typhoidal type. Aureomycin. Patient, typhoidal type of tularemia complicated by pneumonia. Diagnosis confirmed by isolation of B. tularensis from sputum. Rapid clinical and febrile response to aureomycin. (Reprinted from J. A. M. A. **130**: 830 1949).

Chloramphenicol has a slightly wider range in chronic urinary infections because of its ability to combat *P. vulgaris* and *P. aeroginosa*. Otherwise, aureomycin and chloramphenicol are equally effective in infections caused by *E. coli*, *A. aerogenes* and *K. pneumoniae*. Certain diseases resulting from gram-negative cocci may be controlled. Various infections caused by meningococci have responded to aureomycin, but it is certain that this antibiotic will not supplant sulfonamides in this group.

Chloramphenicol and aureomycin are effective in acute gonococcal urethritis. Each agent, however, is spirochetostatic, and, until their effect upon the *Treponema pallidum* is clear these new antibiotics should be used with caution. Aureomycin has enjoyed more extensive testing in certain common streptococcal infections, including those involving the endocardium. Although the results are favorable and additive, until more information is gained, penicillin is regarded as the drug of choice. Chloramphenicol has not been sufficiently tested in streptococcal infections.

GRAM-POSITIVE INFECTIONS

Patients with pneumococcal pneumonia have responded favorably to chloramphenicol and aureomycin. Additional clinical experience is needed to distinguish between their effects and to determine whether either drug is preferable to penicillin. Aureomycin is of proved benefit against staphylococcal infections and is of particular value when penicillin resistant strains have emerged.

VIRAL-LIKE INFECTIONS

The reported clinical experience with these antibiotics in viral-like infections is limited largely to the effect of aureomycin in diseases of the psittacosis-lymphogranuloma group. The available data is favorable but not spectacular in lymphogranuloma venereum. Patients with psittacosis have rapidly responded to aureomycin.

Three independent groups of observers detail the favorable response of patients with primary atypical pneumonia to aureomycin. The authors' results with chloramphenicol are similar. Nevertheless, this syndrome of suspected virus etiology is difficult to assess. Efforts toward specific etiology are to be emphasized. Therapeutic effects obtained in patients with measles, mumps, herpetic virus diseases and infectious mononucleosis are inconclusive, although the results invite further clinical testing. There is no evidence of benefit derived from these antibiotics when employed in other viral infections.

DOSAGE AND TOXICITY

For most acute infections the following doses are recommended: (1) Chloramphenicol—initial dose of fifty mg. kilo and daily dose of fifty mg. kilo given in four, six or eight hour intervals; (2) Aureomycin—initial dose of twenty-five mg. kilo bodyweight and daily dose of twenty-five mg. kilo given in four, six or eight hour intervals.

In general it may be safely stated that both of these antibiotics from streptomyces are well tolerated by human beings without significant ill effects. Nevertheless, the promiscuous use of either agent without clearcut indication is ill-advised.

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RESPIRATORY BORBORYGMUS: A NEGLECTED PHYSICAL SIGN IN HIATUS HERNIA*†

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The three important factors in the diagnosis of hiatus hernia are a suggestive history, a high coefficient of suspicion on the part of the investigator, and a carefully performed radiologic examination. The physical examination, as a rule, plays little part except in the negative direction of excluding other intrathoracic lesions as the cause of the patient's symptoms.

Perkel (1) states, "Physical examination is of little value in diagnosis . . . the roentgen examination is the most important and, practically always, the only means of diagnosis." In fact, many writers, in describing the condition, jump from subjective symptoms to roentgen ray investigations, with no mention of physical signs. In Bockus' comprehensive work (2), for instance, the physical examination of hiatus hernia is not described. Other authors make passing references to auscultatory and other physical findings.

In any condition where all or part of the stomach is situated in the thorax, it is to be expected that alimentary noises should sometimes be detected in the chest. This phenomenon has long been recognized. Thus in the case of thoracic stomach described by Bright in 1836 (3) he stated that the patient's mother often observed during the child's sleep "a frequent rattling or gurgling noise in the side of her chest". Under the heading "Diaphragmatic (excluding Hiatus) Hernia", Bockus makes the following statement: "On palpation, peristaltic sounds or fluid splashes may be detected over the left chest . . on auscultation peristaltic gurgles may be heard." Other authorities (4, 5, 6) merely state that splashing or gurgling borborygmi may be heard over the affected side of the chest.

The following sign, therefore, observed recently in two radiologically proved cases of hiatus hernia, may be of interest (Fig. 1 and 2). Its individuality is twofold: (a) it is not a mere peristaltic gurgling, but it is caused and modified by respiration, and (b) it is elicited at approximately the level of the diaphragm, and not necessarily *over the chest*. In each case the auscultatory finding was noted repeatedly and by numerous observers. It consisted of *a rhythmical, "to-and-fro" gurgling, synchronous with respiration*. The sounds were better heard with the patient sitting than lying, presumably because of the greater excursion of the diaphragm in the sitting position. As might be expected deep respiration intensified the sounds, while holding the breath eliminated the dominant to-and-fro rhythm of the gurgling, though an occasional gurgle or tinkle could still be heard—presumably caused by the incidence of peristaltic movements. In one case the sounds were best heard over the lower left chest anteriorly, and in the other in the neighborhood of the xiphoid process. Thus in each case the sign was elicited in an area where the mere presence of gurgling sounds would not be remarkable;

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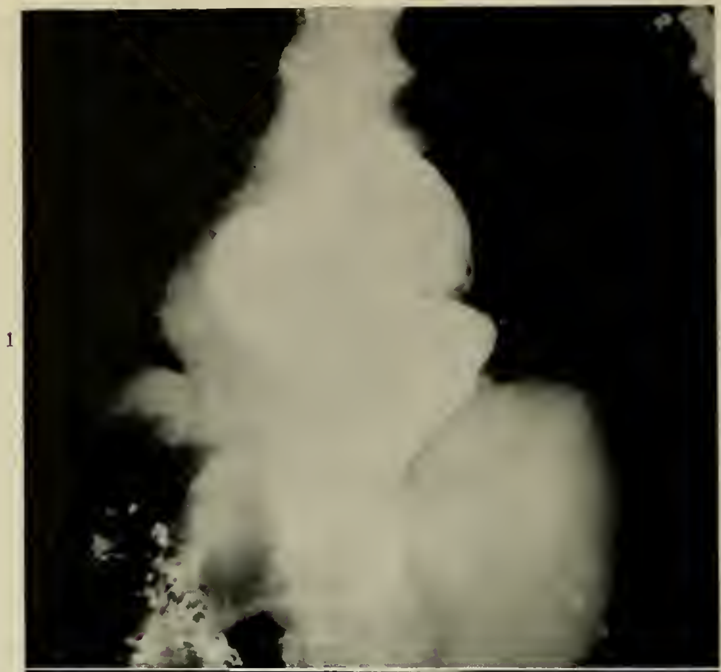

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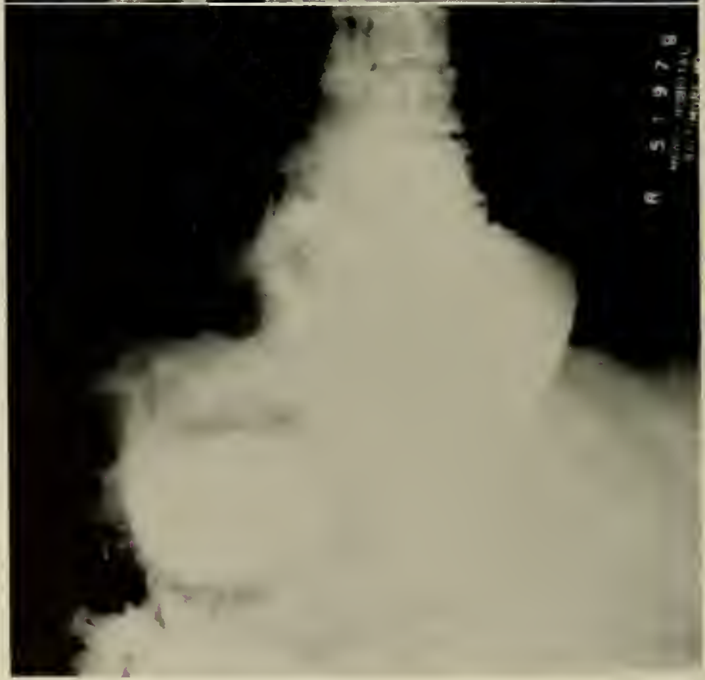

FIG. 1. A roentgenograph of a white female, age 75 years who suffered from asthma. Most of the barium-filled stomach has herniated through the esophageal orifice and is lying within the heart's shadow.

FIG. 2. A roentgenograph of a colored male, age 65 years who complained of substenral discomfort. Much of the barium-filled stomach has herniated through the esophageal orifice.

their close association with respiration, however, made them suspicious and of diagnostic value.

Borborygmi are caused by the effect of peristaltic movements on the fluid contents of the alimentary tract; the sign herein described is presumably caused by the external constricting influence of the moving diaphragm on the fluid contents of the stomach. Perhaps it may be found, therefore, in any condition in which the stomach is partly in the thorax—in diaphragmatic (not hiatus) hernia, in thoracic stomach with congenital short esophagus, as well as in hiatus hernia proper. It would seem that the presence of this sign may be pathognomonic of one or other of these conditions.

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CARDINAL PRINCIPLES IN THE DIAGNOSIS AND TREATMENT OF NEOPLASTIC DISEASES OF THE RECTUM AND RECTOSIGMOID*†

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From the more recently published statistical studies of the immediate results of operation in the treatment of carcinoma of the rectum and rectosigmoid it is obvious that there has been a notable increase in resectability rates, with a corresponding decrease in operative mortality. By what means these improvements have been accomplished may at first appear to be just as obvious, but there is room for some variation of opinion as to the relative importance of each of the measures that may be considered to contribute to good results. Not infrequently, stress is laid upon some factor which in reality would make very little difference if it were entirely discarded. Conversely, some far more important item in technique or preparation may have sunk into obscurity and the consequences of its omission only become apparent on more mature thought.

For these reasons and because of changes that appear to be of almost daily occurrence in this field of surgery, it is not remiss at this time to attempt to draw a true perspective of what could be a rather confusing situation. The foundations upon which most of our present methods have been laid have not materially altered for a long time, but the superstructure has come in for much embellishment.

Fundamentally in this field there has been scarcely any improvement in diagnostic methods and only minor variations in operative technique since the turn of the century. Much the same diagnostic instruments were available then, and there is scarcely an operation, no matter what proper name it may have now assumed, that had not been successfully performed at that time.

The advances have been almost entirely in placing the patient in the most favorable environment to withstand the rigors of extensive surgery, and, in a lesser measure, from the integrated efforts of all those through whose hands he may be expected to pass.

Diagnostically, there are many levels at which awareness of the possible presence of a rectal carcinoma may materialize. Having impressed upon the laity the importance of time in effecting cure, we commit ourselves to a conscientious endeavor to expose every patient to a routine investigation which will not fail him. It is acknowledged that only too often the patient has not taken notice of some timely warning, but once he has put himself in the hands of any member of the profession, the responsibility has passed into new and presumably competent hands. If from this point onwards the

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correct procedure is followed, the diagnosis is made in all cases without exception. That there is any deviation from this "correct procedure" is one of the main reasons for repeating in this paper what has been said so many times before.

Admittedly there are some cases that may be more baffling than others. Those in which there is an obscure abdominal complaint without obvious rectal symptoms may escape the diagnostic routine to which all those with a history of rectal complaints should be submitted. However, it is still interesting to speculate on the frequency with which the elementary principles are not followed. That such a state of affairs should still exist is partly the consequence of persistence by many practitioners of medicine and surgery in the thought that what the finger can't reach roentgenology will surely find, which, of course, is a fallacy.

The simplest of investigations of any rectal complaint requires a complete history, an abdominal palpation, a digital examination, anoscopy, and proctoscopy, to 25 cm. if possible, with no exclusions and no deviation from that sequence. At whatever point these measures are discontinued for reason of some deficiency, they should be resumed when and where the equipment and facilities are available.

To be considered as diagnostic aids only are barium enema and biopsy examination. Gynecologic and urologic studies may occasionally yield useful information. The most frequent omissions are, of course, proctoscopy and, strange to say, digital examination. The most frequent error of commission is the performance of barium enema before almost anything else has been done.

The importance of proctoscopy does not rest only in its ability to demonstrate a lesion needing radical excision. In addition, the information obtained by direct vision may be the only means in preventing the surgeon from making embarrassing mistakes, chief among which is the exposure of patients to the risk of unnecessary surgery. Routine proctoscopy is also definitely to be considered a cancer-preventive in the uncovering of small benign lesions which require fulguration. Furthermore, endoscopic examinations afford the one sure means of yielding information about bowel contents that may not be otherwise obtained, whether the lesion is accessible or at a higher level.

The role of *biopsy* needs some clarification. Although the information gained by it may at times be the determining factor in the form of treatment to be adopted, there are other times when it may confuse. Generally speaking, lesions from which biopsy can be most readily obtained are those about which no histologic information is needed. Of the three clinical varieties of adenocarcinoma, two, the ulcerous and the polypoid, both vegetative forms, present relatively little clinical diagnostic difficulty, but removal of tissue from them is easy. The infiltrative lesion, the type most frequently confused with inflammatory processes, and about which the pathologist's opinion would be most valuable, submits very unwillingly to tissue removal.

The status of apparently benign lesions presents diagnostic fallacies for which both clinician and pathologist share the responsibility. There is no biopsy specimen removed from the surface of an adenomatous lesion, whether sessile or pedunculated, which can be expected to give the complete diagnosis. The prerequisites for good histologic study are a sufficiency of tissue and tissue that is characteristic of the tumor or any part thereof. Error may be either in diagnosing malignancy when none is present or in failing to recognize malignant change.

Binkley and Sunderland (3) have recently warned of the necessity of careful study in determining a difference between adenocarcinoma, grade I, and "adenoma with atypical change" in all discreet pedunculated lesions. The pathologist may feel impelled to err on the side of safety, declaring for malignancy where a tumor is clinically benign. If the entire tumor is removed and submitted for study, its true character will be apparent and radical surgery often avoided.

The question of performing a radical operation for tumors that fall into this class is asked so frequently that one is constrained to give a simple answer. If, after the entire removal of a pedunculated tumor by fulgurating snare and thorough coagulation of the base, the wound heals promptly, nothing further need be done at that time, the pathologist's report notwithstanding. If, on repeated proctoscopy, there is evidence of ulceration and proliferation at the fulguration site, immediate and thorough action should be taken. At most, no more than a few weeks need be lost in this deliberation.

Sessile growths, such as papilliferous adenoma and villous tumor, lesions that may occupy a broad expanse of mucosa, can never be fully evaluated by surface biopsy. Malignant change in the depths of such lesions is the rule. From this there is one important deduction to be drawn, that in all apparently benign neoplasms of the rectum and rectosigmoid, the entire lesion must be submitted if a complete pathologic diagnosis is to be expected.

In the never-ending pursuit for perfection and complete restoration of function in all surgical procedures, the *surgery of rectal neoplasm* has always received its full share of attention. Emphasis has at various times been placed on technique, operative mortality, 5 and 10 year survival, resectability rate, sensitivity to irradiation, and a number of other phases of the subject. Almost everything that has been written within the last 10 years has been devoted to the problem of sphincter preservation, this on the premise that abdominal colostomy is to be avoided at all cost. Under the influence of these numerous contributions, one could easily be carried away by the impression that radical abdomino-perineal excision is being replaced by other more conservative measures. In actual fact, the recently discussed techniques are devoted to lesions of the rectosigmoid or higher and have no conscientious bearing on that overwhelming number of growths that fall within easy reach of the examining finger. Of course, there is very little new about any of the techniques now being recommended. If they are not exact duplications of the operations devised by Hochenegg, (5) Kraske, (7) Maunsell, (8) and others of the nineteenth century school, they embrace some small modification which does not in any way mask their identity.

There is yet another viewpoint which parallels the sphincter-saving motif, and it concerns post-operative survival. Quite naturally, the efforts of the early exponents of rectal excision were attended by high mortality figures. From the beginning of what might be called the Miles era, there has been a steady improvement, so that at the present time resectability rates of 80 per cent or more are concurrent with operative mortality rates of 10 per cent or less, to say nothing of a vast improvement in long-term survival. This means that a peak has already been reached in the success of our surgical treatment of rectal cancer so far as cure is concerned. Any modifications of purely technical approach from now on are almost certain to be anticlimactic.

Efforts to restore sphincter mechanism are not to be discouraged. On the other hand, it is acknowledged that low anterior resection with anastomosis, as promoted by Horsley, (6) Dixon, (4) and Wangansteen, (10) the pull-through operation of Hochenegg, (5) Babcock, (1) and Bacon, (2) and the abdomino-sacral operation with supra-anal anastomosis may be used in certain circumstances. These are: 1. the patient's insistence on preservation of normal function (and the patient should be given some voice in the matter); 2. an early growth situated at or directly above the reflection of the pelvic peritoneum; 3. an advanced lesion with distant metastasis, when hope of cure is to be abandoned.

What has not been sufficiently stressed is that the findings on abdominal section may have considerable bearing on which operation can be satisfactorily performed. Apart from any such impediment as obesity or incomplete decompression, there are certain factors which may either encourage or deter the surgeon in his effort to restore bowel continuity as the operation progresses. The length of the sigmoid loop and the degree of mobility of available bowel should be first noted. A straight pelvic colon with a short mesocolon markedly increase the difficulty in any sphincter-saving operation. However, after ligation and division of the inferior mesenteric vessels and full mobilization of the rectum down to the muscular floor of the pelvis it may become apparent that there is more usable bowel than was originally supposed. In this case, and provided there is no evidence of lateral lymphatic spread, so-called anterior resection with end-to-end anastomosis may be performed. On the other hand, if it is obvious that there is poor exposure of the bowel distal to the growth but a sufficiency of normal bowel and normal mesocolon on the proximal side, continuity may still be reestablished by completion of the operation by one or the other of combined methods through a perineal incision. At any time prior to closure of the abdomen the temporizing procedures may be abandoned in favor of the Miles operation. The principles here involved are by no means simple. The criteria for performing this or that operation are somewhat inexact before the actual undertaking, and the conscientious surgeon should not absolutely commit himself as to what job he will eventually perform. He need never feel chagrined at attempting restoration of bowel continuity and finishing with an abdominal colostomy. The risks involved are increased with the complexity of the procedure. The most disappointing and humiliating complication is local recurrence, which may proceed as much from extrinsic remnants as from inadequate removal of the lesion itself.

The *benign lesions* offer a somewhat broader field in surgical therapy. The size of the lesion has a distinct bearing upon the method employed for its removal. Almost every pedunculated lesion having its attachment within 20 cm. of the anus can be removed by direct fulguration or by means of the Yeomans snare. Above this level laparotomy and transcolic excision is more safely performed and attended by much less risk of perforation.

Sessile growths present similar problems to those encountered in dealing with malignancies, with additional emphasis on the need for maintaining bowel continuity. For low circumscribed lesions transanal excision with or without splitting of the anus by posterior incision is acceptable. For higher lesions any of the ingenious devices for retaining the lower bowel segment may be used, but the risks are the same. In fact, one cannot help feeling a certain trepidation about exposing a patient to the hazards of complex technique for the removal of a relatively innocent lesion.

In evaluating the *anti-infective agents* in preparing the bowel for surgery, it must be realized that the items are not all on the credit side. Briefly, there is some conflict in purpose between disinfection and decompression. When there is no element of obstruction involved, the way is clear for almost perfect chemotherapeutic preparation. But if there is any retardation of the bowel contents, decompression by every available means assumes the more important role.

Many of us have experienced the difficulty of restoring bowel continuity when good mechanical cleansing has not been possible preoperatively, no matter how pure the contents may be. In the case of premeditated total proctectomy of the Miles type there is no call for bowel disinfection anyway.

In conclusion, the following points are emphasized:

1. No case of carcinoma of the rectum and rectosigmoid need escape diagnosis, perhaps early diagnosis, if routine complete examination is done for all patients with a rectal complaint or with some obscure abdominal condition. As Moynihan (10) has so aptly put it, "In all cases of pain between the nipple and the knee, examine the rectum."
2. Barium enema is an adjunct, not a substitute for proctoscopy in diagnosis of lesions within reach of the proctoscope. Biopsy examination is not necessarily conclusive and needs to be considered along with clinical findings.
3. The Miles operation with abdominal colostomy is likely to remain the stand-by for the cure of rectal and rectosigmoidal carcinoma. A sphincter-saving operation may be used only in selected cases.
4. The bowel disinfectants have relative merit in preoperative preparation for surgical procedures on the rectum and rectosigmoid.

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MENINGITIS AS A RESULT OF NEISSERIA FLAVA

A Case Report

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Infection of the meninges with the Neisseria that are often normally present in the pharynx is occasionally reported. Sophian (1) in 1944 described a case caused by N. subflava and included references to most of the recorded infections with the nasopharyngeal Neisseria. Teacher and Kennedy (2) reported a case of meningitis from which they isolated N. flava, and Benson, Brennwasser, and D'Andrea (3) one as a result of infection with N. subflava. Meningitis caused by N. catarrhalis has been recorded by Neal (4) and Corfield (5). A case resulting from an atypical, unidentified Neisseria was reported by Edwards (6), another from which an encapsulated diplococcus resembling N. catarrhalis was isolated by Newing and Christie (7), a third from which an encapsulated, non-fermenting Neisseria producing a yellow pigment was obtained by Christie and Cook (8) and a fourth caused by N. sicca by Bansmer and Brem (9).

Case report: The patient (W. P. P., Chart No. 48746, South Baltimore General Hospital) was a two year old white male child who had developed normally. He sat up at 7 months of age, walked at 10 months and talked at one year. His parents were healthy. There was no family history of tuberculosis, rheumatic fever, or epilepsy.

The child was well until the day before admission when he awakened vomiting, and quickly had a convulsion which lasted about 10 minutes. After the convulsion he did not seem to know any one. The family called their physician who found enlarged inflamed tonsils and gave the child penicillin. During the day there seemed to be some improvement. About 4: 00 A.M. the following night he was observed to be jumping about in his bed and seemed to have fever. The family physician advised bringing the child to the hospital. At the hospital, 7:30 A.M., his temperature was 104.4F. He was very pale, lethargic, and had an upward gaze. The right ear drum was considered slightly inflamed. The pupils reacted normally to light. No mention was made regarding size and shape of pupils. The pharynx was diffusely injected. His neck was stiff and the Babinski reflex was positive on both sides. An examination of the heart, lungs, and abdomen revealed no abnormality.

Laboratory examination: Blood Count (day of admission): Hemoglobin 11.5 gms. (80 per cent) (Sahli). White blood count 11,500 per cubic millimeter; red blood count 4,750,000 per cubic millimeter. Differential: Polymorphonuclear leucocytes 63 per cent, lymphocytes 36 per cent, mononuclears 1 per cent. Spinal fluid (day of admission): Cell count 2,484 per cm. Differential: Polymorphonuclear leucocytes 75 per cent, lymphocytes 25 per cent. Smear showed a Gram negative intracellular diplococcus which on culture grew well on blood agar in the air at 37°C. The colonies on blood agar at the end of 24 hours resembled those of the meningococcus but after 48 hours they were yellow. This organism produced acid without gas in dextrose, maltose, and levulose agar but not in sucrose agar.

In vitro this organism showed susceptibility to penicillin in the presence of 0.025 units and to streptomycin in a concentration of 6 μgm. per ml. It was not sensitive to "citra-sulfar."

It was considered that the patient had meningitis. Therefore, he was given 50,000 units of penicillin every 3 hours; 300 cc. of $2\frac{1}{2}$ per cent glucose; a liquid diet; streptomycin $\frac{1}{4}$ Gram every 6 hours, and "citra-sulfar" one drachm every four hours. Phenobarbital elixir was used as a sedative every 4 hours, as required.

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The patient rapidly improved. His temperature declined during the first 24 hours to 100°F. About noon of the second day it was 102°F. After this it remained normal. Medication was discontinued gradually over a few days and he was removed from isolation after 6 days in the hospital. Spinal fluid examination 9 days after admission showed 80 cells per cmm. but no bacteria. Cultures were negative. The patient was discharged eleven days after admission and has had no further trouble.

SUMMARY

This is a report of a case of meningitis caused by Neisseria flava with rapid recovery after the use of penicillin.

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EXTRAMEMBRANOUS PREGNANCY, REPORT OF THREE CASES* †

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Premature rupture of the membranes, regarded as an accident of pregnancy, may occur before the onset of labor, and was described by Tarnier in 1895 and Bar in 1898. The exact etiology is not always known, though the common causes as listed by Alfonso and quoted by Siddall are: external trauma, internal trauma, hydramnios, oligohydramnios, inflammation of the membranes, anomalies in form or position of the uterus, and tumors of the uterus. In those cases in which the uterus does not empty itself, the membranes may, after rupture, shrink and retract, leaving the fetus in the uterus, but outside of the sac with the continued production of amniotic fluid, and with or without sporadic bleeding. The development of the child is hindered; it is puny, shrunken and some of the joints may be ankylosed. At the time of delivery there is an obvious discrepancy between the potential capacity of the membranous sac and the fetus. This then is designated as an extramembranous pregnancy or graviditas exochorialis.

As Siddall states, this condition, in addition to its rarity, is of interest because of the etiologic and diagnostic problems, its effect upon the child, and because of its possible relation to some other condition. Extramembranous pregnancy has been known to persist for as long as 130 days.

In reviewing the available literature there were noted 25 cases of extramembranous pregnancy, which, with the 3 hereinafter reported makes a total of 28. In analyzing the fate of these 28 gestations it was noted that none progressed to full term, i.e., birth weight was less than 2500 grams. Sixteen were classified as abortions, i.e. birth weight was less than 1000 grams or duration of gestation was less than 28 weeks. There were no multiple pregnancies. Of the remaining 12 premature births, seven were classified as neo-natal deaths, i.e. survival period did not exceed 14 days; four were delivered alive, but their fate was not recorded; one fetus survived. This then gives an overall fetal salvage in 28 gestations of 3.5 per cent.

In addition to the above, there were noted 6 cases of graviditas examnialis. The fate of these pregnancies was happier. Four feti survived, one succumbed, and the outcome of the sixth instance was not recorded. Five of these 6 pregnancies went to term. The fetal salvage rate of this small series was 83 per cent.

In 1904 Meyer-Rüegg reported 11 cases; however, there were no additional data included and the diagnosis was considered to be rather tenuous.

One author reported an extra-uterine and extramembranous pregnancy as occurring in the same patient.

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The following are to be differentiated from extramembranous pregnancy:

(a) Hydrorrhea gravidarum, which is a periodic or intermittent discharge of clear, yellowish and sometimes bloody fluid from the uterus. In typical hydrorrhea the secretion accumulates between the decidua vera and reflexa, periodically breaking through the mucus plug; or there may be a continuous dribbling. The pathologic basis is not fully understood except that a decidual endometritis is usually considered the cause.

(b) Rupture of the chorion and the escape of sub-chorionic fluid may also simulate this condition. However, the amniotic fluid can often be recognized microscopically by the flocculi of vernix caseosa, lanugo hairs and sometimes by meconium. It is usually impossible to make a positive diagnosis and in all instances the patient is treated as a threatened abortion.

(c) Any other cause of bleeding during the last two trimesters of pregnancy can be differentiated by appropriate study which reveals the rightful etiology and the presence of intact membranes.

In graviditas examnialis the amnion ruptures but the chorion remains intact and the amnion is found shrunken and hanging around the insertion of the cord. On gross examination this can be distinguished from extramembranous pregnancy.

In placenta circumvallata the membranes double back over the edge of the placenta for a variable distance; in extramembranous pregnancy this appearance is actually caused by a smaller amnion and chorion-covered plate, the remaining margin being covered by a layer of decidual cells mingled with fibrin. In the last two instances the true state of affairs may not be ascertained with certainty until the termination of pregnancy demonstrates the pathology.

Case Report #1 (74176 r.g.). This patient was a 20 year year old colored, registered, para 2–0–0–1 whose estimated date of confinement was June 9, 1941. Her serologic test for syphilis was negative, and her family history and past medical history were non-contributory. Past obstetric history revealed that she was delivered at term in the first pregnancy by low forceps in May of 1937. This pregnancy was complicated by pre-eclampsia and secondary anemia, with puerperal morbidity as a result of endometritis. She was delivered of a second full term living child in February of 1940 by low forceps; the postpartum course was uneventful, the only complication being secondary anemia. She was admitted during this, her third pregnancy, on March 5, 1941 because of intermittent vaginal bleeding, the onset of which was February 9, 1941, at approximately 23 weeks; bleeding was painless and despite sedation and bed rest it continued. On March 11, 1941 sterile pelvic examination showed no evidence of placenta previa or other pathology. A placentogram was confirmatory. The patient began labor on March 18, 1941, and after a total labor of two hours and thirty-six minutes, (third stage ten minutes) she delivered spontaneously a premature stillborn female child weighing 825 grams. It measured 34 centimeters in length but the amniotic sac was only large enough to contain a small lemon or 100 cc. of water when completely filled. The opening in the sac measured 4 centimeters in diameter. The fetus died approximately sixteen hours preceding delivery. Mention was made in the delivery note that the placenta did not come away easily, it being expressed with some difficulty and accompanied by a moderate amount of bleeding. The placenta weighed 230 grams and measured 12 x 10 by 3.5 centimeters. The general shape was ovoid with a central implantation of the cord. The maternal surface was normal; fetal surface showed definite limitations of the membranes which did not cover the cotyledons for several centimeters beyond the periphery. The cotyledons were large and irregular in size and separated, all parts being present. The patient's postpartum course was uneventful and she was discharged on her thirteenth postpartum day in good condition. Laboratory studies were within normal limits except for a hemoglobin of 8.6 grams. An autopsy was not obtained on the fetus.

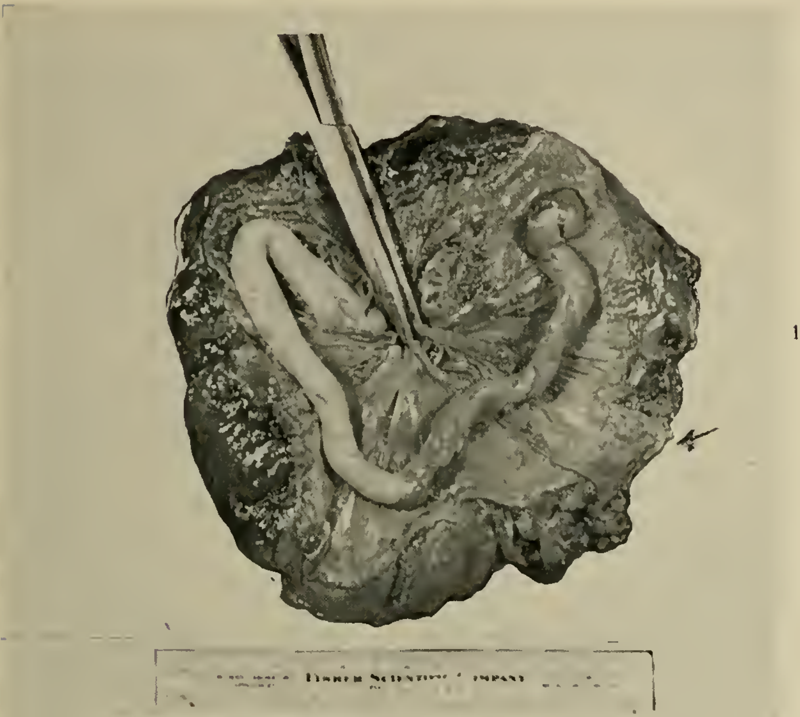
Case #2 (65320 n.p.). This patient is a 28 year old colored; para 2–0–0–2, registered, whose serologic test for syphilis was negative, and her estimated date of confinement was July 12, 1941. Family history and past medical history were non-contributory. Past obstetric history revealed that she was delivered of her first full term child in May 1936, by low forceps; her postpartum period was uneventful and she was discharged on her 13th day, the only complication being secondary anemia. Her second child was delivered spontaneously in May 1939; postpartum course was uneventful and she was discharged on her 9th day postpartum.

The patient was admitted on April 17, 1941 at approximately twenty-four weeks of pregnancy with a history of intermittent bleeding since February 1941. On the day of admission she had a sudden gush of blood from the vagina and was brought to the hospital. A sterile pelvic examination revealed the cervix to be two centimeters dilated. No placental tissue could be palpated and an unsuccessful attempt was made to apply a scalp clamp. It was noted that the membranes had apparently ruptured. The patient soon went into labor; and after six hours and five minutes, with the third stage of fifteen minutes, she delivered spontaneously a premature living male child weighing 765 grams. She was discharged on her ninth day postpartum in good condition. Complications noted were secondary anemia, extramembranous pregnancy and antepartum bleeding. The placenta was described as weighing two hundred grams, measuring 14 x 10 by 1.5 centimeters and being roughly oval in shape. There was an old blood clot over half the maternal surface of the placenta. The cord was eccentrically inserted. The membranes were a small fibrous ring pulling the fetal surface together just above the placenta. The fetus survived only a few hours. Autopsy of the fetus was described as follows: external examination, "The body is that of a twenty-four week, colored, male fetus, measuring 26 centimeters in length; the arms and legs are flexed; there is webbing of the skin between the neck and shoulders and between the chest and forearms as well as the thighs and legs. The feet appear clubbed and the hands look unusual," though this was not further enlarged upon. "The hard palate is cleft. The whole body has a strange appearance, but no major abnormality can be made out. Internal examination reveals a patent ductus arteriosus with atelectasis of the lungs."

Case #3 (103169 j.h.). This patient was a 28 year old, colored, non-registered, Rh positive, serologic tests for syphilis negative, para 5–2–0–5. Estimated date of confinement was October 8, 1946. Family history and past medical history were non-contributory. Past obstetric history revealed that her fifth and seventh pregnancies terminated at twenty-eight weeks, the feti living only twenty-four hours, the causes of death being unknown.

She was admitted on July 20, 1946 stating that her membranes had ruptured June 9, 1946 at approximately the 24th week of pregnancy, with continuous leakage of a pink stained fluid since that time. On July 19, twenty-four hours prior to admission, there was a sudden flow of bright red blood, which subsided on bed rest. On the morning of the day of admission, when the patient arose, bleeding again commenced and hospitalization was advised. A physical examination was essentially normal except for a vaginal discharge which was obviously amniotic fluid, stained with blood. A placentogram revealed the placenta in the fundus, and a vertex presentation. The uterus was enlarged to the size of a 28 week pregnancy. Sterile pelvic examination showed the cervix normal and firm. The presenting part was felt through a tight os, and a mass which was thought to be placenta was palpated anterior and to the left of the cervix. The patient was typed and cross-matched and given a transfusion. She continued to have a serosanguinous discharge through August 1, 1946, when she went into labor spontaneously. After a total labor of nine hours, under gas, oxygen anesthesia, she was delivered of a premature living male child weighing 1530 grams by low forceps. The third stage lasted twenty-seven minutes. The placenta was expressed with some difficulty and blood loss was estimated at 500 cc. She was given a transfusion of citrated whole blood on the table. Two hours following delivery her condition was good and she was returned to her bed. Her postpartum course thereafter was uneventful. The infant lived about twenty-four hours.

Description of the placenta was as follows: weight 410 grams, measuring 18 x 16 by 2.5 cm., length of cord 43 centimeters, with a central insertion. Placental tissue extended one to 3.5 centimters beyond the attachment of the membranes. This denuded placental area was covered with a fibrinous exudate, granular in appearance, which extended over the cotyledons and chorion for a variable distance up to four centimeters. Microscopic description: sections of the placenta showed no distinct abnormalities in the construction of the villi or in the decidua. There was, however, a layer of fibrin on the outer surface of the amniotic membrane, and a scant amount of organizing clot of blood was



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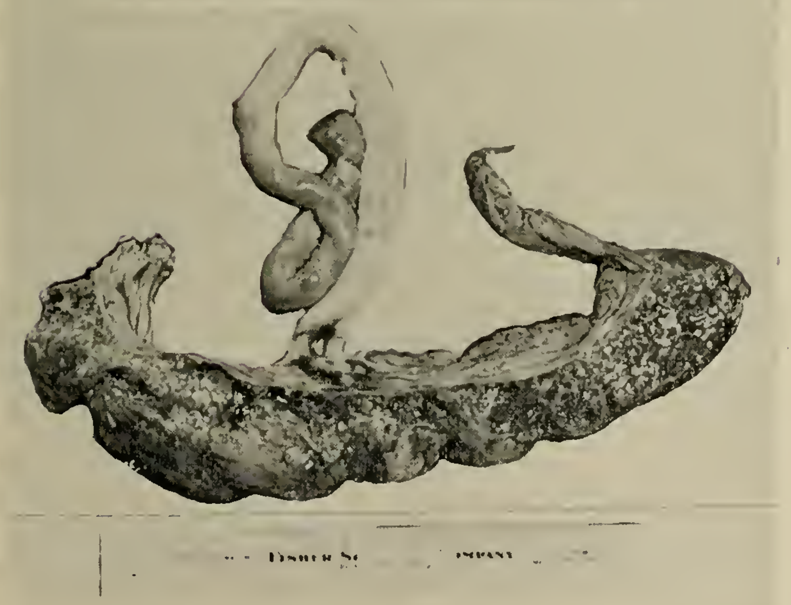

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FIG. 1. View of chorionic plate, demonstrating its limitations, with fibrin covering the remaining placental surface. The arrow points to the fibrinous layer stripped back from the chorion (Case #3)

FIG. 2. Saggital section demonstrating limitations of the chorionic plate with fibrin covered placenta extending beyond its limits (Case #3)

also present on the membranes. A few of the vascular spaces in the decidual portion of the placenta were thrombosed. The umbilical cord contained three vessels, all patent. On the basis of the gross examination of the placenta, the diagnosis of extramembranous pregnancy was made.

An autopsy of the fetus revealed a fetus of 30 weeks gestation which measured 38 centimeters in length and weighed 1530 grams. There were no abnormalities noted other than a patent ductus arteriosus, cutaneous petechial hemorrhages over the chest with edema of the scalp and pulmonary atelectasis, bilateral.

SUMMARY

1. Three cases of extramembranous pregnancy are presented.
2. All three occurred in colored multigravida.
3. A known period of 53 days elapsed between onset of symptoms and delivery in one case (Case 3).
4. Painless vaginal bleeding was the presenting symptom in all cases.
5. Onset of symptoms occurred prior to the period of viability in all cases.
6. Labor was premature in all cases.
7. The puerperium was uneventful in all cases.
8. Fetal mortality was 100 per cent.
9. Gross fetal anomalies were present in one case.
10. Abnormal bleeding in the third stage of labor occurred in two cases.
11. Labor was spontaneous in all cases.
12. Etiology of the rupture of the membranes could not be determined.
13. Evidence of intrapartum infection was not present in any of these cases.
14. Twenty-five additional cases are reviewed.

CONCLUSIONS

1. Extramembranous pregnancy is a known pathologic entity which is characterized by:

(a) Premature rupture of the membranes.

(b) Failure of labor to become established in the expected period of time.

(c) Continued production of amniotic fluid and its escape per vagina.

(d) Intermittent episodes of painless vaginal bleeding with progressive anemia.

2. Differential diagnosis includes: myomata uteri, cervical polypi, hydrorrhea gravidarum, rupture of the chorion, graviditas examnialis, placenta circumvallata, and other causes of bleeding in the last two trimesters of pregnancy.

3. Fetal salvage in cases reviewed plus the three reported was 3.5 per cent.

4. The dangers for the fetus in extra-amniotic pregnancy are not as great as those in extramembranous pregnancy.

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CLINICO-PATHOLOGIC CONFERENCE

From the Case Histories, University Hospital, Baltimore

CLINICAL HISTORY

This 37 year old white, married female was admitted to the hospital at 8 P.M. because of coma, spasms and extensor rigidity. Her present illness began after an active day in the city. She had returned home and is said to have raised her hand to her head, removed her glasses and collapsed. She was semi-comatose when her family doctor arrived a short time later. The doctor found her unresponsive with athetoid movements of her upper extremities. She was sent to the University Hospital Accident Room, arriving about 8 P.M. Her past history revealed that she lost her left eye as a result of a bee sting at the age of three years. She had had a fracture of her ribs and her left forearm within the previous two years. Her general health had been excellent. She was married and had several children. According to her relatives, she was extremely nervous. During the past two weeks she had complained that combing her hair caused pain.

Physical examination. On admission the patient had a temperature of 101 F; pulse 92 per minute; respirations Cheyne-Stokes; and blood pressure 120 systolic and 70 diastolic. She was well developed and well nourished. There was extensor rigidity, opisthotonos, and bowel incontinence. These manifestations were spasmodic and were not relieved by calcium gluconate given intravenously. There was no evidence of injury to the head. The left eye was artificial. The right eye had normal tension, the pupil oscillated on light stimulation and was widely dilated. The fundus was negative except for questionable papilledema. There was no nuchal rigidity. The breasts were normal. The chest was symmetrical. The percussion note was resonant over the lung fields. There were rhonchi and coarse rales over the entire chest. The heart was normal in size, shape and the sounds were clear. The peripheral pulses were normal. There was no abdominal rigidity. No masses were palpable. The extremities showed only the athetoid movements mentioned above and carpopedal spasm. There was no paralysis and no abnormality of the deep tendon reflexes was noted at any time. Babinski's sign was negative bilaterally.

A lumbar puncture was carefully done in the 4th lumbar interspace without anesthesia. The fluid rose to the top of the manometer (600 millimeters). About 4 cc- of gross bloody fluid was slowly removed. Her course was rapidly downhill. Respira. tions became irregular and greatly slowed. Caffeine and Coramine failed. She did not respond to adrenalin. Death occurred at 10 P.M.

A spinal fluid culture was negative for pyogenic organisms. The centrifuged spinal fluid was not xanthochromic. No other laboratory studies were done.

CLINICAL DISCUSSION

Dr. J. G. Arnold, Jr. In summary, this 37 year old woman is neither arteriosclerotic nor hypertensive. The problem is obviously one of spontaneous intracranial hemorrhage. The symptoms came on suddenly and without trauma. The age, together with the lack of arteriosclerosis and hypertension, strongly suggest that the patient had a defective blood vessel.

There are, of course, several different types of defective blood vessels which cause spontaneous intracranial bleeding. One of the most common is a congenital aneurysm. Another source of spontaneous bleeding is a congenital vascular anomaly such as an arteriovenous aneurysm. Another source of spontaneous bleeding might be from a rapidly growing tumor which causes a sudden onset brought about by hemorrhage from a necrotic blood vessel. Bleeding secondary to a ruptured arteriosclerotic vessel is much more likely to occur in older people.

Of the possibilities mentioned, I am inclined to feel that this patient had a ruptured aneurysm because of her age, a normal blood pressure, and the fact that aneurysms occur more frequently than bleeding from a vascular anomaly or bleeding into a tumor.

What is the location of the hemorrhage? We have no neurologic data which would lead us to the location of the lesion because the patient was in coma and showed only extensor rigidity.

What is the location of the bleeding in relation to the brain and to the coverings? The onset was sudden followed by almost immediate coma and the development of extensor rigidity. As a general rule, in aneurysms which rupture into the subarachnoid space, the clinical course is usually less violent than in the case under discussion. They may be very irritable, have stiffness of the neck, be mentally confused and, in general, run a more subacute course. Instead of rupturing into the subarachnoid space, aneurysms may rupture into the brain substance and in many cases, this is followed by rupture into the ventricular system. In rare instances, the bleeding occurs primarily in the subdural space. I have already stated that I believe this patient to have a congenital aneurysm and from her clinical course, I would predicate that it has ruptured into the brain and ventricular system.

Any intracranial artery might be the site of a congenital aneurysm, but the majority occur around the anterior part of the circle of Willis. Because of this, we might suppose that the rupture occurred in relation to the internal carotid, anterior cerebral, or middle cerebral arteries. The most common site is the intracranial portion of the internal carotid and therefore, from the standpoint of probabilities, one would say the internal carotid. However, the internal carotid is more likely to rupture into the subarachnoid space and in this case, we feel that the hemorrhage has occurred into the brain itself, so that I think the likelihood is that either the anterior or middle cerebral arteries are the most likely location of the aneurysm.

The patient became unconscious almost immediately after the onset of the bleeding and this is a good indication that the hemorrhage not only occurred into the brain substance but also ruptured into the ventricular system. When there is a sudden increase in intracranial pressure from tumor or hemorrhage, the pressure is frequently directed to the mid-brain with strangulation of the brain stem at the tentorium. This is a frequent cause of extensor rigidity.

Apparently, the rigidity came on rather quickly. This makes me consider the probability that the patient had hemorrhage into the mid-brain shortly after the onset.

When decerebrate rigidity develops after an interval, one thinks of tentorial herniation rather than intrinsic injury to the brain stem. The patient was described as having athetoid movements indicating a flexor posture in the upper extremities. This may indicate a "high" decerebration in contrast to the classical "low" extensor rigidity of all four extremities when the lesion is below the hypothalmus and red nucleus levels. Because of the early onset of extensor rigidity, we might suspect hemorrhage into the brain stem, rather than tentorial herniation.

In Summary, it is my impression that the patient had a ruptured congenital aneurysm arising from either the middle or anterior cerebral artery. The bleeding occurred into the brain and quickly ruptured into the ventricular system, with the further possibility that the hemorrhage may have extended into the brain stem.

Dr. Edward F. Cotter. In reading through the proctocol, I came to advance the same conclusion. Any patient who had such a catastrophic illness in all probability had a vascular disease, and such are often hemorrhagic in nature. Certainly all the evidence points to hemorrhage within the cranial vault. I would anticipate that the hemorrhage would arise from an aneurysm. Ordinarily, however, there is a great increase in intracranial pressure as a result of hemorrhage, and one is likely to have extensor rigidity. While it is possible to have an aneurysm develop in the brain stem or in the cerebral substance, and rupture into the brain substance with secondary extension, it is much less common than an aneurysm which may rupture into the subarachnoid space. My feeling is that the patient had an aneurysm of the circle of Willis. I think it is rather difficult as to whether it is intracerebral or extracerebral in origin, but by the law of averages I would think that it was an aneurysm of the circle of Willis with rupture into the cerebral substance.

Dr. Hugh R. Spencer. What is the relation of hypertension to intra-cranial aneurysm?

Dr. Arnold. Congenital aneurysms are usually not associated with hypertension although a hypertensive patient may also have an aneurysm. The weakness in the vessel is the result of a congenital defect of the muscularis and certainly the majority of the patients with ruptured intra-cranial aneurysms have normal blood pressure. Also aneurysms are more common in the younger age groups before hypertension and arteriosclerosis develop.

Dr. Spencer. What is the mortality during the first attack?

Dr. Arnold. Hamby (3) in 1948, reported a follow-up study of 130 cases of spontaneous subarachnoid hemorrhage; 39 per cent of them died in the first attack. Of the 63 cases which survived the first admission to the hospital, only 21 were found to be well, with an additional 24 able to work with handicaps or were neurologic cripples. In the past decade, the surgical attack of intra-cranial aneurysms has been a noteworthy advance. The work of Moniz on arteriography has laid the ground work for our present surgical interest. The surgical treatment of intra-cranial aneurysm consists of direct attack on the aneurysm intra-cranially and by internal carotid ligation. The high mortality of untreated cases emphasizes the need for surgical consideration in every case.

Dr. Robert Sheppard. Are the lesions single or multiple?

Dr. Arnold. They may be single or multiple, but in our experience, Dr. Wagner says that multiple aneurysms have not been common.

Dr. Donald E. Fisher. What laboratory procedures are adaptable to diagnosis of intracranial aneurysm?

Dr. Arnold. Roentgenographs of the skull in some cases will show calcification in the wall of an aneurysm; in most cases, however, it does not. Arteriography is a tremendous help in the diagnosis and localization of intra-cranial aneurysm and should be employed almost routinely in cases of spontaneous subarachnoid hemorrhage. The anterior part of the circle of Willis can be visualized by injection of Diodrast into the carotid artery. For visualization of the vertebral circulation, the injection has to be made into the vertebral artery.

PATHOLOGIC FINDINGS

An autopsy was performed 14 hours after death and was limited to an examination of the brain. The dura was tense and slightly blood-stained but otherwise normal. Over both frontal lobes was extensive subarachnoid hemorrhage with congestion of the pia and flattening of the gyri. The hypophysis was normal. The fresh brain weighed 1400 grams. There was extensive subarachnoid hemorrhage covering the anterior $\frac{2}{3}$ of both frontal lobes. Further subarachnoid hemorrhage was found in foci over the parietal and occipital lobes. The entire basilar meninges was filled with blood. There was blood in the cisterna magna. No arterial abnormalities were externally visible.

Upon sectioning the brain the entire ventricular system was seen filled with fresh blood. The left basal ganglia was soft with complete destruction of the internal capsule on the left side. It was seen that the septum pellucidum was partially destroyed. The left lateral ventricle extended into a cavity in the left prefrontal region, and then extended to the midline. At a level 1 cm. rostral to the optic chiasm, a rent was seen in the left forceps minor through which blood had entered the supra callosal cystern. At the level of the genu of the corpus callosum, an aneurysm of the left anterior cerebral artery was found, measuring 1 x .5 cm. This had ruptured. Microscopic studies confirmed the hemorrhagic destruction of much of the left internal capsule and left frontal lobe. The remainder of the brain showed no further primary change. Sections of the left anterior cerebral artery at the site of the aneurysm, showed a bulbous vascular protrusion with thinning of the media and a disappearance of the internal elastic lamella at the point where the aneurysm arose from the anterior cerebral artery.

ANATOMIC DIAGNOSIS

Aneurysm, congenital anterior cerebral artery left, ruptured; hemorrhage, intracerebral, frontal lobe left, secondary; hemorrhage, intraventricular and subarachnoid, massive, secondary.

DISCUSSION

Dr. John A. Wagner. The course of events in this disease process are clearly defined. A pre-existing aneurysm of the left anterior cerebral artery, which lay along the medial surface of the left frontal lobe ruptured, first into the frontal lobe and then extended through the left forceps minor to the supra-callosal cystern, giving rise to massive subarachnoid hemorrhage. Simultaneously, the hemorrhage ruptured into the left lateral ventricle, including the septum pellucidum, giving rise to massive intraventricular hemorrhage, the latter being the immediate cause of death. The significance and the mechanism involved in death following intraventricular hemorrhage has been recently described (1, 2).

Cerebral aneurysm may be divided into 3 categories; arteriosclerotic, mycotic, congenital. Syphilitic aneurysms are rare. Other vascular lesions described as aneurysms are often arterio-venous fistulae. Congenital aneurysm is the result of a congenital weakness of the media of an artery which arises usually near a bifurcation and which gradually results in the formation of a true aneurysm, the lesion becoming clinically apparent between the 20th and 40th year. The important fact is that the aneurysm is not congenitally present but, rather results from a congenital defect in the media which is the congenital anomaly. The majority of congenital aneurysms are located within the rostral portion of the circus arteriosus and average less than 1 cm. in size. Excepting local cranial nerve involvement by pressure (if the aneurysm is in the vicinity of the II, III, V or VI nerves) there is usually no syndrome until rupture occurs. Rupture may be as a slow leak and recovery may be effected, but as an average, secondary rupture (usually massive) may develop within a 4 year period. Organization of the entire aneurysm is uncommon. When massive rupture occurs, it may take a number of courses. Since the aneurysm is usually embedded in a partially organized leptomeninx, rupture follows the line of least resistance, the brain. Hemorrhage and subsequent extension via the cisterna magna or cortical rupture is usually intracerebral with secondary intraventricular spread. Occasionally, initial subarachnoid rupture is noted.

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OBSTETRICAL CASE REPORT*

A twenty six year old primigravida was first seen on January 19th, at which time she stated that her last menstrual period had begun on December 2nd. At the time of examination the usual early symptoms of pregnancy (nausea, breast changes and frequency of urination) were present. The pelvic examination showed a uterus the consistency and size of which was compatible with a pregnancy of five or six weeks duration. The remainder of the physical examination was normal. A diagnosis of pregnancy was made. She was given the usual instructions and was told to return to her obstetrician on February 9th. Upon her return in February, her progress was noted as satisfactory.

On February 28th her husband called, saying that his wife was suffering considerable abdominal pain which had been present then about two hours and which showed no signs of subsiding. Upon questioning it was revealed that the abdominal pain was followed by some slight vaginal bleeding which was constant and which was not increasing.

Question: a. What is the probable diagnosis?

b. How should the case be managed?

DISCUSSION

The most significant point in the patient's history is that the onset of pain preceded the onset of bleeding. Another point is that the amount of pain was out of proportion to the blood loss. While not absolutely diagnostic, these features point most strongly toward the diagnosis of a rupture of a tubal pregnancy. Indeed, the evidence is so strong that it must not be ignored. Such cases should be seen at once either at home or should be immediately admitted to a hospital.

Further management will then depend upon the physical findings present. Should there be evidence of surgical shock (rapid pulse, pallor, falling blood pressure) with evidence of blood loss greater than could be accounted for by the vaginal bleeding, and if abdominal tenderness, rigidity or muscle spasm be present, there should be little doubt that there is present a ruptured ectopic pregnancy.

Immediate laparotomy is the next logical step in the management of this case, since only in this way can bleeding be controlled. Plasma or preferably whole blood should be administered before, during and following the operation as needed.

ACTUAL TREATMENT

On admission to the hospital a diagnosis of a ruptured ectopic pregnancy was made and immediate preparation for a laparotomy was ordered. The patient was given a transfusion of whole blood prior to the operation, the transfusion being continued through the operation to a total of 1500 cc., the last 500 cc. being given after the operation. In this patient the diagnosis was confirmed during the operation which was without incident. A salpingectomy was performed following which she made an uneventful recovery.

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* From the Department of Obstetrics, School of Medicine University of Maryland and University Hospital, Baltimore.

DEPARTMENT OF OBSTETRICS

Statistical Summary

July 1, 1948 through June 30, 1949

	TOTAL	HOME		HOSPITAL SERVICE		PRIVATE
		Wh.	Col.	Wh.	Col.	
1. Number of patients discharged	3521	7	658	503	1311	1042
2. Number of patients delivered and discharged (twins 36 sets)	3217	7	658	456	1167	929
a. Patients delivered of viable infants	3132	6	647	450	1150	879
b. Patients aborting	85	1	11	6	17	50
3. Maternal mortality	3	0	0	0	2	1
a. Rate per 1000 live births	0.965	0	0	0	1.76	1.12
4. Number of viable babies born	3168	6	650	454	1172	886
a. Term	2892	5	610	415	1024	838
b. Premature*	276	1	40	39	148	48
a. Number born alive	3108	6	643	444	1136	879
a. Term	2865	5	607	410	1011	832
b. Premature	243	1	36	34	125	47
b. Number still born	60	0	7	10	36	7
a. Term	27	0	3	5	13	6
b. Premature	33	0	4	5	23	1
c. Rate per 1000 viable births	19.3	0	10.8	22.3	31.7	7.9
5. Number of neonatal deaths	41	0	5	7	20	9
a. Term	16	0	2	3	6	5
b. Premature	25	0	3	4	14	4
c. Rate per 1000 live births	13.3	0	7.8	15.7	17.6	10.1
6. Total fetal mortality	101	0	12	17	56	16
a. Rate per 1000 births	32.6	0	18.6	38.0	49.3	18.0

* A premature baby is one which weighs less than 2500 grms. at birth.

Patient Status

		LIVE BIRTHS	STILL BIRTHS	ABORTION	TOTAL
Private patients	(twins 7 sets)	872	7	50	929
White—registered clinic	(twins 4 sets)	382	4	2	388
White—nonregistered clinic	(twins 0 sets)	64	6	5	75
Colored—registered	(twins 24 sets)	1625	28	19	1672
Colored—nonregistered	(twins 1 set)	130	14	9	153
Total	36	3073	59	85	3217

PRESENTATION: PREMATURE AND FULL TERM (DELIVERY DIAGNOSIS)

	SPON. DEL. HOME		SPON. DEL. HOSP.		OPERATION FROM BELOW		OPERATION FROM ABOVE		TOTAL	
	Wh.	Col.	Wh.	Col.	Wh.	Col.	Wh.	Col.	Wh.	Col.
Vertex	3	515	189	392	1054	669	37	47	1283	1623
Face	0	0	1	2	3	2	0	1	4	5
Brow	0	0	0	0	1	0	0	0	1	0
Breech	1	4	3	10	44	36	3	3	51	53
Transverse	0	0	0	2	3	5	2	2	5	9
Compound	0	0	0	0	0	0	0	0	0	0
Unknown	2	132	0	0	0	0	0	0	2	132
Total	6	651	193	408	1107	713	42	53	1346	1822

TYPES OF DELIVERY

			SERVICE		PVT.	TOTAL	%
			Wh.	Col.			
1. Spontaneous			116	1057	83	1256	39.6
2. Operative			344	766	802	1912	60.4
	LOW	MID					
a. Forceps—total	1721	6	312	670	745	1727	54.4
Indications							
Control	1393	0	244	549	600	1393	80.8
Presentation occiput posterior	174	3	35	77	65	177	10.25
Delivered as such	67	1	13	34	21	68	38.7
Following forceps rotation	77	2	17	28	34	79	44.6
Following manual rotation	30	0	5	15	10	30	16.7
Presentation occiput transverse	142	2	30	38	76	144	8.35
Following forceps rotation	108	2	24	33	43	110	76.4
Following manual rotation	34	0	6	5	23	34	23.6
Presentation face	5	0	2	2	1	5	.23
Labor prolonged	5	1	0	4	2	6	.27
Heart disease	1	0	1	0	0	1	.05
Cord—prolapse of	0	0	0	0	0	0	
Presentation brow	1	0	0	0	1	1	.05
b. Breech extraction—total			17	36	27	80	2.47
Frank breech			7	22	19	48	60
a. Decomposed			0	4	5	9	18.7
Full breech			10	14	8	32	40
Primigravida			6	11	14	31	42.5
Multigravida			10	21	11	42	57.5
Head—aftercoming—forceps to			5	10	9	24	30

TYPES OF DELIVERY—*Continued*

						SERVICE		PVT.	TOTAL	%
						Wh.	Col.			
c. Version—internal podalic and breech extraction—total						1	4	0	5	0.16
Indications										—
Presentation transverse						1	2	0	3	—
Second twin						0	2	0	2	—
d. Craniotomy—total						0	1	0	1	0.032
Indications										—
Disproportion cephalopelvic						0	1	0	1	—
e. Other destructive operations—total						3	2	0	5	0.16
Indications and types: decapitation—transverse						2	2	0	4	—
Decapitation, cleidotomy—shoulder dystocia						1	0	0	1	
f. Laparotomy (other than cesarean section)—total						1	1	0	2	0.063
Indications and type: abdominal pregnancy, sec., tera. adv.						1	0	0	1	—
Abdominal preg., sec., adv., hysterectomy, left adnexal excicision						0	1	0	1	—
g. Cesarean section—all types—total						10	52	30	92	2.94
	CLASS	LAPARO TRACH.	EXTRA PERITO.	P.M. CESAR.	CESAR. HYSTER.					
Indications	3	72	11	2	4	10	52	32	92	
1. Pelvis contracted	2	18	6	0	0	2	18	6	26	28.2
2. Baby—excessive size of	0	0	1	0	0	0	1	0	1	1.08
3. Inertia uterine	0	2	1	0	0	0	2	1	3	3.26
4. Malpresentation	0	4	1	0	0	0	3	2	5	5.4
5. Pelvis—tumor blocking	0	0	0	0	1	0	1	0	1	1.08
6. Placenta previa	0	3	0	0	1	2	1	1	4	4.3
Centralis	0	1	0	0	0	0	1	0	1	25
Partialis	0	1	0	0	1	2	0	0	2	50
Marginalis	0	1	0	0	0	0	0	1	1	25
7. Placenta—premature separation of	0	2	0	0	1	0	3	0	3	3.25
Complete	0	1	0	0	1	0	2	0	2	66
Partial	0	1	0	0	0	0	1	0	1	33.3
8. Preeclampsia	0	7	0	0	0	0	7	0	7	7.6
9. Posteclampsia	0	1	0	0	0	0	1	0	1	1.08
10. Eclampsia	0	0	0	0	0	0	0	0	0	0
11. Hypertensive disease	0	1	0	1	0	0	0	2	2	2.16
12. Section previous	1	24	1	0	1	3	12	12	27	29.4
a. C P D	1	10	1	0	1	1	8	4	13	48.2
b. Section previous	0	9	0	0	0	2	3	4	9	33.3
c. Multiple preg.	0	1	0	0	0	0	0	1	1	3.7
d. Epilepsy	0	1	0	0	0	0	0	1	1	3.7
e. Diabetes	0	2	0	0	0	0	1	1	2	7.4
f. HCVD	0	1	0	0	0	0	0	1	1	3.7

TYPES OF DELIVERY—*Continued*

	CLASS	LAPAROTRACH.	EXTRAPERITO.	P.M. CESAR.	CESAR. HYSTER.	SERVICE		PVT.	TOTAL	%
						Wh.	Col.			
Indications, *Continued*										
13. Breech presentation	0	3	0	0	0	0	1	2	3	3.25
14. Primigravida (elderly)	0	0	0	0	0	0	0	0	0	0
15. Rh neg.—titre	0	2	1	0	0	1	0	2	3	3.25
16. Hr neg.—titre	0	1	0	0	0	0	0	1	1	1.08
17. Diabetes	0	3	0	0	0	2	0	1	3	3.25
18. Rectal stricture	0	1	0	0	0	0	1	0	1	1.08
19. Mat. death	0	0	0	1	0	0	1	0	1	1.08

OTHER OPERATIONS AND PROCEDURES NOT INCLUDING DELIVERY

	SERVICE		PVT.	TOTAL	%
	Wh.	Col.			
1. Episiotomy—total	257	596	737	1590	50.8
a. Central	249	587	687	1523	95.8
With rectal laceration	19	47	35	101	6.7
b. Paramedian	8	9	50	67	4.2
With rectal laceration	0	0	2	2	3.0
2. Perineorrhaphy—total	44	67	32	143	4.6
a. Indicated (laceration)	29	60	24	113	79
b. Elective (old R.V.O.)	15	7	8	30	21
3. Trachelorrhaphy	14	33	37	84	2.7
a. Indicated	10	25	28	63	75
b. Elective	4	8	9	21	25
4. Hysterostomatomy—total	2	4	2	8	0.25
a. Dystocia cervical: forecoming head	2	4	2	8	
b. Dystocia cervical: aftercoming head	0	0	0	0	
5. Hysterectomy—total	1	2	0	3	0.10
a. Uterus couvaillaire	0	1	0	1	
b. Uterus—rupture of	1	0	0	1	
c. Uterus—fibroids of	0	0	0	0	
d. For sterilization only	0	0	0	0	
e. Placenta accreta	0	1	0	1	
6. Dilatation and curettage—total	1	2	10	13	15.2
a. Secundines retained	0	2	10	12	
b. Mole, hydatidiform	1	0	0	1	
7. Placenta, manual removal of—total	6	12	13	31	1
a. Placenta adherent	3	7	3	13	42
b. Placenta retained	3	5	10	18	58
8. Hematoma, evacuation of	0	1	1	2	0.6
a. Vagina	0	1	1	2	

Other Operatioes and Procedures—*Continued*

	Service		Pvt.	Total	%
	Wh.	Col.			
9. Fetal scalp clamp—application of—total	3	4	0	7	0.22
a. Placenta previa	2	0	0	2	
b. Placenta—premature separation of	1	3	0	4	
c. Inertia uterine	0	1	0	1	
10. Amniorrhexis for induction of labor—total	4	13	7	24	0.77
a. Preeclampsia	1	8	3	12	50
b. Hypertensive disease	1	1	0	2	8.3
c. Placenta previa	2	0	0	2	8.3
d. Placenta—premature separation of	0	3	3	6	25.0
e. Rh negative with no antibodies	0	0	1	1	4.2
f. Hematuria—cause unknown	0	1	0	1	4.2
11. Sterilization	20	49	6	75	2.3
a. Section previous	3	11	4	18	24
b. Multiparity (para 8 or more)	13	27	1	41	55
c. Hypertensive disease	1	6	0	7	9.3
d. Renal disease	0	1	0	1	1.3
e. Pathology cardiac	1	2	1	4	5.5
f. Mental deficiency	1	0	0	1	1.3
g. Diabetes	1	0	0	1	1.2
h. Epilepsy	0	1	0	1	1.2
i. Psychosis	0	1	0	1	1.2
ACCOMPANYING SECTION	2	11	7	20	26.6
12. Appendectomy accomp. sterilization	4	19	0	23	
13. Cystorraphy	0	1	0	1	
14. Saphenous ligation	1	0	1	2	
15. Adnexal resection	1	0	1	2	
16. Vagina, laceration, repair of	4	8	15	27	
17. Diastasis, recti, repair of	0	1	0	1	
18. Cyst, inclusion, vaginal, repair of	0	0	1	1	
19. Pack, vaginal	0	0	1	1	
20. Labia, minora, lac. of, repair of	0	0	1	1	
21. Septum, vaginal, removal of	0	0	1	1	
Abortions—total	7	28	50	85	2.64
Therapeutic—total	0	4	3	7	0.22
a. Hypertensive disease	0	3	1	4	
b. Preeclampsia	0	0	0	0	
c. Heart disease, rheumatic	0	1	1	2	
d. Heart disease, congenital	0	0	1	1	
Spontaneous—total	7	24	47	78	2.4
a. Syphilis—maternal	0	0	0	0	
b. Hypothyroidism	0	0	0	0	
c. Dysfunction—endocrine	0	0	0	0	
d. Fetus—abnormality of	0	0	0	0	
e. Etiology undetermined	7	24	47	78	
Requiring completion	0	0	10	10	

COMPLICATIONS

	SERVICE		PVT.	TOTAL	%
	Wh.	Col.			
Maternal					
Placental—total	29	62	34	125	4.0
Placenta previa centralis	0	1	0	1	0.25
Placenta previa partialis	2	2	0	4	
Placenta previa marginalis	2	0	1	3	
Placenta, premature separation of	10	20	11	41	1.3
a. Implanted normally	10	19	9	38	
b. Implanted low	0	1	2	3	
Placenta retained	3	8	10	21	0.67
Placenta adherent	2	6	1	9	
Placenta, anomalies of	0	3	0	3	
Cord, prolapse of	0	2	0	2	
Pelvis contraction of (x-ray classification)	12	89	20	121	3.9
Gynecoid—small	2	20	1	23	
Android	1	16	0	17	
Anthropoid	8	35	16	59	
Platypelloid	1	17	3	21	
Mixed types	0	1	0	1	
Labor	30	128	73	231	
Prolonged	4	48	24	76	2.43
Shock antepartum	0	1	0	1	
Intrapartum	1	0	0	1	
Postpartum	0	1	0	1	
Uterus—inertia of	1	10	5	16	0.5
Rupture of	1	0	0	1	
Inversion of	0	0	1	1	
Ring contraction	0	2	2	4	0.125
Membranes—rupture of—premature	23	66	41	130	
Dystocia—cervical	0	0	0	0	
Hemorrhage and blood dyscrasia	71	134	117	322	10.2
Anemia	5	6	1	12	
Hemorrhage antepartum	0	1	0	1	
intrapartum	0	1	1	2	
postpartum	3	15	6	24	0.77
Rh negative—total	63	111	109	283	9
With antibodies	8	8	7	23	8.1
Cardiovascular disease	6	8	7	21	0.67
Rheumatic	6	8	4	18	
Cardiac arrhythmia	0	0	1	1	
Congenital	0	0	1	1	
Paroxysmal auricular tachycardia	0	0	1	1	
Toxemia	28	168	40	236	7.55
Hypertensive disease	10	69	15	94	40
Benign	10	69	15	94	
Mild	9	57	10	76	
Severe	1	12	5	18	
Malignant	0	0	0	0	

Complications—*Continued*

	SERVICE		PVT.	TOTAL	%
	Wh.	Col.			
Maternal—*Continued*					
Renal disease	0	5	0	5	2.6
Nephrosclerosis	0	0	0	0	
Glomerulonephritis	0	0	0	0	
Acute	0	0	0	0	
Chronic	0	0	0	0	
Nephrosis	0	4	0	4	
Acute	0	0	0	0	
Chronic	0	4	0	4	
Renal disease—other forms	0	1	0	1	
Preeclampsia	18	87	17	122	51.7
Mild	12	51	13	76	
Severe	6	36	4	46	
Eclampsia	0	7	1	8	3.4
Convulsive	0	7	1	8	
Nonconvulsive	0	0	0	0	
Vomiting of pregnancy	0	0	7	7	
Unclassified	0	0	0	0	
Infection	36	125	35	196	6.1
Genital tract 3.67%	27	69	22	118	
Puerperal 3.04%	19	61	18	98	
Wound-perineal	4	1	3	8	
Others	4	7	1	12	
Respiratory	1	12	3	16	0.5
Pneumonia—all types	1	3	0	4	
Tuberculosis active	0	7	3	10	
Tuberculosis arrested	0	2	0	2	
Urinary tract	6	36	8	50	1.54
Pyelitis—antepartum	5	14	3	22	
Pyelitis—postpartum	1	22	5	28	
Infection miscellaneous, Bartholinitis	0	2	0	2	
Cellulitis, acute suppurative thigh	1	0	0	1	
Infection, upper respiratory	0	2	1	3	
Syphilis	1	1	0	2	
Pericarditis	0	1	0	1	
Thrombophlebitis	0	1	0	1	
Phlebothrombosis	0	1	0	1	
Mastoiditis	0	0	1	1	
Hydramnios	1	0	1	2	
Mole hydatidiform	1	0	0	1	
Diabetes	6	3	1	10	0.31
Preg., abdominal, secondary	1	1	0	2	
Hernia, ventral	1	0	0	1	
Sclerosis multiple	0	3	0	3	
Malignancy—generative tract	0	0	0	0	
Epilepsy	1	3	1	5	

COMPLICATIONS—*Continued*

	SERVICE		PVT.	TOTAL	%
	Wh.	Col.			
Maternal—*Continued*					
Rectum—stricture of	0	1	0	1	
Fibroids	0	7	0	7	
Cervix, polyp of	0	0	1	1	
Hydronephrosis	0	2	1	3	
Hematuria	0	1	0	1	
Anemia, sickle cell	0	1	0	1	
Meningismus, post-spinal	0	1	0	1	
Dermititis	1	2	0	3	
Varicosities	1	1	0	2	
Psychoneurosis, et al	1	4	2	7	
Heat exhaustion	0	0	1	1	
Fractures, right thigh	0	1	0	1	
Uterus, subinvolution of	0	0	1	1	
Ovarian cyst	0	0	1	1	
Thyrotoxicosis	0	1	0	1	
Fetal	12	47	25	84	2.67
Injury and disease	3	21	13	37	1.17
Hemorrhage intracranial	0	8	2	10	0.32
Atelectasis	2	9	5	16	0.5
Newborn—hemolytic disease of	6	4	3	8	
Clavicle, fracture of	6	0	3	3	
Infection	3	18	4	25	0.79
Diarrhea	1	1	0	2	
Thrush	1	3	4	8	
Impetigo	0	2	0	2	
Conjunctivitis	0	3	0	3	
Pneumonia	0	1	0	1	
Syphilis, congenital	1	2	0	3	
Omphalitis	0	6	0	6	
Development—abnormalities of	6	8	8	22	0.7
Hydrocephalus	0	2	1	3	
Spina bifida	0	0	0	0	
Other					
Talipes equinovarus	2	1	0	3	
Polydactylism	0	1	1	2	
Hypospadios	0	0	1	1	
Heart, congenital	2	0	1	3	
Harelip and cleft palate	1	0	0	1	
Cyclops	0	0	1	1	
Calcaneo valgus	0	0	1	1	
Right hand, anomaly of	1	0	0	1	
Hernia—inguinal	0	2	0	2	
Strabismus, internal, bil.	0	0	1	1	
Bladder, urinary, extrophy	0	0	1	1	
Unclassified	0	2	0	2	

TOTAL NUMBER OF VIABLE BABIES (TWINS—36 SETS)

Born alive

	HOME DELIVERY				HOSPITAL DELIVERY						TOTAL		% died.
	Wh.		Col.		Service				Private				
					Wh.		Col.						
	L.	D.	L.	D.	L.	D.	L.	D.	L.	D.	L.	D.	
Birth weight—less than 1000 grms.*	0	0	0	0	0	0	0	0	0	0	0	0	
1000 to 1499 grms.. 0.28%	0	0	2	1	0	2	8	5	0	1	10	9	47.5
1500 to 1999 ....1.6%	0	0	5	1	7	1	26	5	13	3	51	10	16.4
2000 to 2499 ....5%	1	0	26	1	23	1	77	4	30	0	157	6	3.7
All premature live births 6.88%	1	0	33	3	30	4	111	14	43	4	218	25	10.3
*Lived for 48 hours	0	0	0	0	0	0	0	0	0	0	0	0	
Term live births (2500 plus grms.)	5	0	605	2	410	3	1002	6	827	5	2849	16	

PREMATURE LABOR—CAUSES OF

8.43%

	HOME DELIVERY		HOSPITAL DELIVERY			TOTAL
	Wh.	Col.	Service		Private	267
			Wh.	Col.		
Induced	0	0	0	14	1	15
Toxemia	0	0	0	10	0	10
Preeclampsia	0	0	0	9	0	9
Posteclampsia	0	0	0	1	0	1
Hypertensive disease	0	0	0	0	0	0
Renal disease	0	0	0	0	0	0
Other toxemias	0	0	0	0	0	0
Hemorrhage	0	0	0	4	0	4
Placenta previa	0	0	0	1	0	1
Placenta—premature separation of	0	0	0	3	0	3
Other hemorrhages	0	0	0	0	0	0
Rh negative with antibodies	0	0	0	0	1	1
Spontaneous						
Toxemia	0	0	1	6	0	7
Preeclampsia	0	0	0	1	0	1
Eclampsia	0	0	0	0	0	0
Hypertensive disease	0	0	0	4	0	4
Renal disease	0	0	0	0	0	0
Other toxemias	0	0	1	1	0	2

Premature Labor—*Continued*

	HOME DELIVERY		HOSPITAL DELIVERY			TOTAL
			Service		Private	267
	Wh.	Col.	Wh.	Col.		
Spontaneous—*Continued*						
Hemorrhage	0	0	6	14	1	21
Placenta previa	0	0	1	2	0	3
Placenta—premature separation of	0	0	5	11	1	17
Other hemorrhages	0	0	0	1	0	1
Membranes—premature rupture of	0	1	3	24	6	34
Syphilis	0	0	2	2	0	4
Hydramnios	0	0	0	1	0	1
Pregnancy multiple	0	2	2	5	1	10
Fetus—abnormalities of	0	0	0	0	1	1
Fetus—intrauterine death of	1	1	0	2	0	4
Cause undetermined	1	33	24	76	36	170

Etiology of Neonatal Mortality (Stillbirths and Deaths in Live Born)

	PREMATURE					FULL TERM				
	Home delivery		Hospital delivery			Home delivery		Hospital delivery		
			Service		Private			Service		Private
	Wh.	Col.	Wh.	Col.		Wh.	Col.	Wh.	Col.	
Hemorrhage intracranial	0	0	0	1	0	0	0	1	5	1
Disproportion cephalopelvic	0	0	0	0	0	0	0	0	1	0
Delivery vertex—traumatic	0	0	0	1	0	0	0	1	4	1
Anoxemia	0	1	3	11	0	0	2	0	4	3
Placenta—premature separation of			2	6					1	1
Placenta previa				2						
Toxemia			1							
Cord—umbilical compression of				1						
Complications—medical							1		1	1
Abd. preg., sec., plac. sep.				1						
Atelectasis				1						
Maternal death									1	1
Undetermined		1					1		1	
Development—anomalies of	0	0	0	1	1	0	0	1	2	2

ETIOLOGY OF NEONATAL MORTALITY (STILLBIRTHS AND DEATHS IN LIVE BORN)—*Continued*

	PREMATURE					FULL TERM				
	Home delivery		Hospital delivery			Home delivery		Hospital delivery		
			Service		Private			Service		Private
	Wh.	Col.	Wh.	Col.		Wh.	Col.	Wh.	Col.	
Infections	0	0	1	2	0	0	1	1	0	1
Syphilis			1	2			1			
Pneumonia										1
Septicemia								1		
Diarrhea										
Prematurity	0	3	4	13	3	0	0	0	0	0
Disease—hemolytic—congenital	0	0	0	1	1	0	0	2	2	1
Hemorrhage other than cerebral	0	0	0	0	0	0	0	0	0	0
Injuries	0	0	1	1	0	0	1	3	2	0
Miscellaneous	0	0	0	2	0	0	0	0	0	0
Undetermined	0	2	0	3	0	0	1	1	6	3

MATERNAL MORBIDITY*

	HOME DELIVERY				HOSPITAL SERVICE				PRIVATE		TOTAL	
	Wh.	Rate	Col.	Rate	Wh.	Rate	Col.	Rate	No.	Rate	No.	Rate
All causes	0	0	22	3.3%	27	5.9%	66	5.7%	32	3.4%	147	4.6%
Birth canal only	0	0	18	2.7%	23	5.0%	45	3.9%	19	2.0%	105	3.3%
Delivery spontaneous	0	0	18	2.7%	5	4.5%	16	3.9%	1	1.2%	40	3.2%
Delivery operative below	0	0	0	0	16	4.8%	24	3.4%	14	1.8%	54	3.0%
Delivery operative above	0	0	0	0	2	19%	5	9.4%	4	13.6%	11	11.7%

* The criterion used for maternal morbidity is the standard of a temperature elevation to 100.4 degrees or over on any two days of the puerperium excluding the day of delivery.

ADULT DEATHS

	WH.	COL.	TOTAL	%
Non-maternal mortality	0	0	0	0
Maternal mortality	1	2	3	0.093
Registered clinic patients	0	2	2	0.123
Non-registered clinic patients	0	0	0	0
Private patients	1	0	1	0.108

MORTALITY RATE PER 1000 LIVE BIRTHS

	TOTAL	RATE	WT.	RATE	COL.	RATE
Registered clinic	2	1.00	0	0	2	1.23
Non-registered clinic	0	0	0	0	0	0
Private	1	1.08	0	0	0	0
Combined	3	1.04				

Causes of adult deaths:

1. Hypertensive disease
2. Congestive heart failure
3. Hypertensive subarachnoid hemorrhage

SUMMARIES OF MATERNAL DEATHS

Case No. 1

A forty-two year old, white, para 3–0–0–3, was admitted on July 8, 1948 at term and in labor. Her first two pregnancies were uncomplicated in 1922 and in 1937. The pregnancy in 1942 was complicated by hypertension. On her first visit at 28 weeks, her blood pressure was 166/90. On June 28, 1948, she was admitted to the hospital because of hypertension. Her blood pressure fluctuated between 180 systolic over diastolic 100 and 140 systolic over diastolic 84. She was discharged on the fourth hospital day. Her labor started at 6 A.M. on July 8, 1948, and on admission to the hospital soon thereafter, she was in early labor. Her blood pressure was 164 systolic over diastolic 96, and she had rales in her lung fields. A second blood pressure soon thereafter was 185 systolic over diastolic 120. At 6 P.M. her pulse was 120 and at 8 P.M. she was given 100 milligrams of demerol and gr. 1/100 scopolamine, and her cervix was 3 to 4 cms. dilated. At 10 P.M. the cervix was 4 cm. dilated, presenting part level, pulse 112, and respiration 24. She was given another 100 mgms. of demerol and gr. 1/150 of scopolamine. At 10:15 P.M. she complained bitterly of abdominal pain. Twenty minutes later she became cyanotic. Her blood pressure and pulse were unobtainable. She was given artificial respiration and oxygen by mask, but was pronounced dead at 10:45 P.M. A postmortem section was done with delivery of a 2943 gm. stillborn, male fetus. Autopsy showed cardiac hypertrophy, pulmonary edema and congestion, congestion of the liver and kidneys, dependent edema, and acute splenic tumor.

Cause of death: hypertensive disease; cardiac failure.

Case No. 2

A seventeen year old, colored, registered, primigravida, was admitted on June 2, 1949 near term, because of convulsions. Her prenatal course was uneventful until thirty-five weeks, when she had a blood pressure of 152 systolic over 86 diastolic with a trace of albumin. One week later her blood pressure was 122 systolic over 82 diastolic with a trace of albumin. She missed her next visit and on the evening of June 1, 1949 she complained of a severe headache, which was still present the following morning. At 7:45 A.M. on June 2, 1949, she had a convulsion followed by two more in the ambulance on the way to the hospital. She was admitted at 8:32 A.M. with a blood pressure of 220 systolic over 140. diastolic At 8:37 A.M. she was given a gr. ½ of morphine sulphate hypodermically, and at 8:42 A.M. she was given sodium amytal gr. 7½ intravenously. At this time her blood pressure was 220 systolic over 130. diastolic At 8:45 A.M. she had another generalized convulsion, and with it her respiration ceased, although her pulse remained good for another five minutes. During this five minute period, the patient was intubated and given positive pressure oxygen. At 8:52 A.M. she received coramine intravenously, and at 8:55 A.M., 15 minums of adrenalin into the heart muscle. She was pronounced dead at 8:52 A.M., and at 8:57 A.M. a postmortem cesarean section was done with delivery of a 2533 g. stillborn, female. Autopsy showed cerebral congestion; atelectasis of both lower lobes of lungs.

Cause of death: eclampsia.

Case No. 3

A forty-six year old, colored, registered, para 5–0–0–5, was admitted to the hospital on March 28, 1949 in the twenty-sixth week of her pregnancy because of hypertension. The patient had had hypertension for twenty years, and during the last four of her pregnancies. On admission to the hospital, her blood pressure was 220 systolic over 120 diastolic with a trace of albumin. She was treated conservatively with a blood pressure fluctuation of 150 systolic over 88 diastolic to 220 systolic over 138. diastolic Chest roentgenographs showed cardiac enlargement, and slight congestive changes. E K G revealed left ventricular strain. There was marked narrowing of the eye vessels with A/V. compression. The dilution-concentration test showed a concentration of 1.013 and a dilution to 1.000 She went into spontaneous labor on April 29, 1949, and delivered a 1503 g. premature, living, male child. Her blood pressure readings did not vary from the antepartum recording. She was discharged on May 7, 1949, on her seventh day in a satisfactory condition. On May 21, 1949, she was brought to the accident room, complaining of severe headache and a stiff neck. Her blood pressure was over 280 systolic over 130 diastolic. She was given sodium luminal, papavarine and a subsequent lumbar puncture showed bloody cerebro-spinal fluid. Six hours after coming to the accident room, the patient died. An autopsy showed subarachnoid hemorrhage marked; cerebral edema marked; pulmonary congestion; congestion of the liver, kidneys and spleen.

Cause of death: Hypertensive disease; subarachnoid hemorrhage.

Maternal mortality covering eleven year period

	1938	1939	1940	1941	1942	1943	1944	1945	1946	1947	1948, 6 MONTHS	7/1/48 6/30/49
Peritonitis and uremia									1			
Pregnancy, abdominal	1											
Abruptio placenta	2	1	1									
Shock, intrapartum (without hemorrhage)	1											
Embolus, pulmonary	1							1			1	
Infection, puerperal	1		2	1	1					1		
Uremia	1											
Reaction, transfusion	1											
Anesthetic	1	1	2			2		1				
Heart disease, rheumatic-decompensation	1		1				1	1				
Liver, acute yellow atrophy of		1										
Cardiovascular collapse		1	1	1	1	1						1
Cardiac dilatation		1	1		1					1		
Uterus, rupture of		1	1	1		1		1	1		1	
Hemorrhage, intracranial			1	2							1	1
Arsphenamine encephalitis				1								
Tuberculosis				1	1		1					
Embolus, cerebral				1								
Leukemia, acute myeloid				1								
Eclampsia, ante and intra-partum				1			3		2		1	1
Hemorrhage, postpartum						1	1					
Ileus, paralytic					1							
Adrenal gland, insufficiency of.					1							
Preeclampsia, severe, with shock							1			1		
Placenta previa								1				
Bronchiolitis, acute									1			
Total 74	10	6	10	10	6	5	7	5	5	3	4	3
Rate per 1000 live births	5.4	3.0	4.4	3.9	2.0	1.6	2.4	2.19	1.89	0.905	2.88	0.96

EDITORIAL

THE NEW BULLETIN

With this and with subsequent editions of the *Bulletin*, a revision of the editorial policy and management will become evident. These changes have resulted from a desire of both the Faculty and Alumni to place the *Bulletin* in a position where it will more closely parallel the advancing scientific and educational programs of the Medical School.

To effect these changes, a reorganization of the Editorial Staff has centered the responsibility for publication in a Medical Editor with a group of Associate and Contributing Editors. The business management is centered in a Managing Editor who will publish the *Bulletin* and in addition, secure from approved advertisers, a limited number of paid advertisements.

The Alumni Association is now cooperating in the publishing of the *Bulletin* through a substantial financial contribution. This will enable the *Bulletin* to include a larger and more informative Alumni Section.

The scientific section of the *Bulletin* will now include articles concerning original research, reviews and general articles relating to subjects of general medical and surgical interest. With each edition will appear a Clinico-pathologic Conference and an Obstetric Case Report. Books for review will be solicited and reviews will be promptly published.

Other proposed additions to the new *Bulletin* will include an editorial on some important phase of medicine, and from time to time special articles written by request covering important topics.

The *Bulletin* thus assumes a more dominant and useful purpose in the advancing status of the Medical School and Hospital, serving also as a journal which we hope will be of increasing usefulness to the Alumni of the Medical School.

The Faculty, the Alumni and the Editorial Staff are deeply interested in the success of this new venture. Constructive articles and suggestions for improvement will be welcomed and may well become a part of an even greater *Bulletin*.

MEDICAL SCHOOL SECTION

GRANTS FOR RESEARCH

Grants for research totalling $116,973 have been recently announced through the office of the Dean of the Medical School. The grantors and recipients are listed below.

To Dr. William R. Amberson, Department of Physiology, from the United States Public Health Service, a grant of $6,973 for further investigation into the nature of muscle protein.

To Dr. Charles Bagley, Jr., Department of Neurosurgery, a grant from the Hoffberger Foundation of $50,000 for research and teaching in neurosurgery.

To Dr. Theodore E. Woodward, Department of Medicine (Infectious Diseases) from Mr. Charles P. McCormick, a grant of $10,000 for continued research in infectious diseases.

To Dr. Charles Bagley, Jr., Department of Neurosurgery, from an anonymous donor, a grant of $50,000 for continued research in neurosurgery.

The National Institute of Health has awarded to Dr. John C. Krantz, Jr., Professor of Pharmacology, a grant of $6,500.00 for the purpose of conducting studies in the mechanism of the action of drugs on the cardiovascular system.

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STATE BOARD EXAMINATIONS

As evidence of the quality of medical training afforded the graduates of the University of Maryland School of Medicine, an analysis of the State Board examinations throughout the nation during the past ten years indicates a rate of 98.46 per cent passing grades. During the past two years there has not been a single failure in either the National Board or the State Board examinations.

CANCER LECTURES

Through the cooperation of the United States Public Health Service, the Cancer Committee of the University presents each year a series of lectures by well known scientists concerning various aspects of malignancy. The present series began on September 28, 1949 with an address by Dr. Wilhelm C. Hueper who spoke on "Environment and Cancer". On October 19, 1949, Dr. Joseph H. Globus, Assistant Professor of Neurology at Columbia University delivered an address concerning "Theories Regarding the Genesis of Brain Tumors" and on December 14, 1949, Dr. Mark M. Ravitch of the Johns Hopkins Hospital spoke on "Hemipelvectomy".

For those who might desire to attend future lectures, the following schedule for the remainder of the 1950 season is listed.

January 18, 1950—Speaker: Dr. Joseph V. Meigs
Vincent Hospital, Boston, Massachusetts
Topic: Uterine Carcinoma, Illustrated

February 15, 1950—Speaker: Dr. John Pemberton
Mayo Clinic, Rochester, Minnesota
Topic: Carcinoma of the Thyroid Gland
March 15, 1950—Speaker: Dr. Charles B. Huggins
University of Chicago, Chicago, Illinois
Topic: Carcinoma of the Prostate
April 15, 1950—Speaker: Dr. Norman J. Wilson
Boston, Massachusetts
Topic: Lung Malignancies

DR. STEERS

EDWARD STEERS APPOINTED TO FACULTY

A vacancy on the staff of the Department of Bacteriology has been filled by the appointment of Dr. Edward Steers as Associate Professor of Bacteriology, effective, July 1, 1949.

Dr. Steers obtained his B.S. degree from Moravian College, Bethlehem, Pennsylvania in 1932. After graduation he taught chemistry and later biology at Moravian College. In 1937 he was granted the degree of M.S. from Lehigh University and in

February 1949, his PhD. from the University of Pennsylvania. The work for the latter degree was done in the Department of Bacteriology under Dr. M. G. Sevag.

Dr. Steers' primary interest has been in the physiology and biochemistry of bacteria, and the mode of action of chemotherapeutic agents on which he has published a number of papers.

EXHIBITS

Dr. Harry M. Robinson, Jr. and Dr. Fred R. McCrumb presented an exhibit entitled "Comparative Analysis of the Muco-Cutaneous-Ocular Syndromes" at the annual meeting of the American Academy of Dermatology and Syphilology held in Chicago, December 3rd to 8th, 1949.

Recent exhibits by the Department of Dermatology include vesicular vs. nonvesicular Darier's Disease (Benign Dyskeratosis). This presentation was given at the Annual Meeting of the Sothern Medical Association in Cincinnati and at the December, 1949 meeting of the American Academy of Dermatology and Syphilology held in Chicago, both exhibits being under the direction of Dr. Francis A. Ellis, Assistant Professor of Dermatology.

Dr. John C. Krantz, Jr., has been appointed Special Consultant to the United States Public Health Service as a member of the Pharmacology Study Section of the National Institutes of Health. The appointment covers a five year period beginning January 1, 1950.

FRIEDENWALD LECTURE

The fourth annual Julius Friedenwald Lecture was given in Chemical Hall on October 27, 1949, by Dr. Henry L. Bockus, Professor of Gastro-enterology, University of Pennsylvania, Graduate School of Medicine. Dr. Bockus chose as his subject *Acute Pancreatitis.*

Dr. J. Edmund Bradley, Professor of Pediatrics, has announced the organization of a Pediatric Cardiac Clinic at the University under the direction of Drs. Sidney Scherlis and Gibson J. Wells.

This Clinic is laying particular emphasis upon research and management of cardiac lesions in young children.

Dr. A. H. Finkelstein, class of 1927, representing the Department of Pediatrics of the University of Maryland, recently presented an exhibit on *Tuberculosis in Children* at the American Medical Association meeting held in December at Washington, D. C.

THURSDAY LECTURES ANNOUNCED

The Post-graduate Committee has recently announced the resumption of the "Thursday Lectures" which will be held at the University Hospital from 5 to 6 P.M.

A Committee under the Chairmanship of Dr. Milton S. Sacks is now preparing the program for the Spring season of 1950. This should include at least two presentations by eminent authorities on clinical subjects. Announcement of exact dates and subjects will be sent to all physicians in the vicinity of Baltimore through the office of the Post-graduate Committee. Detailed plans will be announced in a forthcoming edition of the *Bulletin.*

ALUMNI ASSOCIATION SECTION

OFFICERS

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Vice-Presidents

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John H. Hornbaker, M.D.
John Mace, M.D

Thurston R. Adams, M.D., *Secretary*
Simon Brager, M D., *Assistant Secretary*
Minette E. Scott, *Executive Secretary*
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Austin Wood, M.D.
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Nominating Committee

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Robert F. Healy, M.D.
Ernest I. Cornbrooks, M.D.
Frank K. Morris, M.D.

Library Committee

Milton S. Sacks, M.D.

Representatives to General Alumni Board

John A. Wagner, M.D.
Thurston R. Adams, M.D.
William H. Triplett, M.D.

Representatives, Editorial Board, Bulletin

Harry C. Hull, M.D.
Albert E. Goldstein, M D.
Wm. H. Triplett, M.D. (ex-officio

Alumni Council

Louis H. Douglass, M.D.
Lewis P. Gundry, M.D.

The names listed above are officers for the term beginning July 1, 1949 and ending June 30, 1950.

PRESIDENT'S LETTER

Fellow Alumni:

Near the close of the Constitutional Convention in Philadelphia in 1787 Benjamin Franklin was asked what the delegates had given us. He replied, "We have given you a Republic if you can keep it". As alumni of the School of Medicine, University of Maryland, I think we might apply the great Philosopher's far-reaching observation to our situation and try and realize that we have been given a Medical School and it is our duty and obligation to keep it.

With that thought foremost in mind, I believe a strong, active and interested Alumni Association is as essential as buildings, faculty, laboratories and all the other elements involved in making a Medical School.

It is, therefore, high time that we quit looking for the mote in our neighbor's eye, bury animosities, forget grievances and begin trying to make constructive contributions to the effort involved in developing the type of Alumni Association needed to reach that objective.

DR. WILLIAM H. TRIPLETT

I have no doubt but that the rank and file of our alumni share that view and it is my desire that they be given full opportunity to participate in policy determination. I welcome your suggestions and hope you will honor me with your helpfulness, our Association with your interest, and our School with your loyalty. I shall treat your comments with deep interest, great respect, and profound confidence.

Let us try and get together, pull together, and together enjoy the fruits of accomplishment.

Sincerely yours,
William H. Triplett, M.D.
President

ITEMS

Selection of Candidate for Alumni Honor Award, 1950

A sub-committee of the Board of Directors of the Medical Alumni Association is now receiving nominations from the Alumni for the annual Alumni Honor Award and gold key, to be presented at the annual meeting of the Medical Alumni Association in June, 1950. Selection of the 1950 recipient will be made in February and will be announced in the April edition of the *Bulletin.*

This annual award is made to a distinguished graduate of the University of Maryland School of Medicine, the College of Physicians and Surgeons or the Baltimore Medical College in recognition of outstanding achievement in the practice of medicine and for significant contributions to science. Nomination is made by the Board of Directors upon recommendations from members of the Alumni Association.

All who might wish to nominate a candidate for this important honor should communicate with Dr. William H. Triplett, President of the Medical Alumni Association, Lombard and Greene Streets, Baltimore 1, Maryland prior to February 15, 1950.

FIFTY YEAR CLASSES HONORED

Each year the Medical Alumni Association presents to those physicians, Alumni of the University of Maryland, Baltimore Medical College and College of Physicians and Surgeons, an appropriate certificate recognizing fifty years of continuous service as Alumni of their respective schools.

This year will honor the class of 1900 of whom the Alumni files show 50 physicians who are still active in the practice of medicine and who will shortly receive the fifty year certificate.

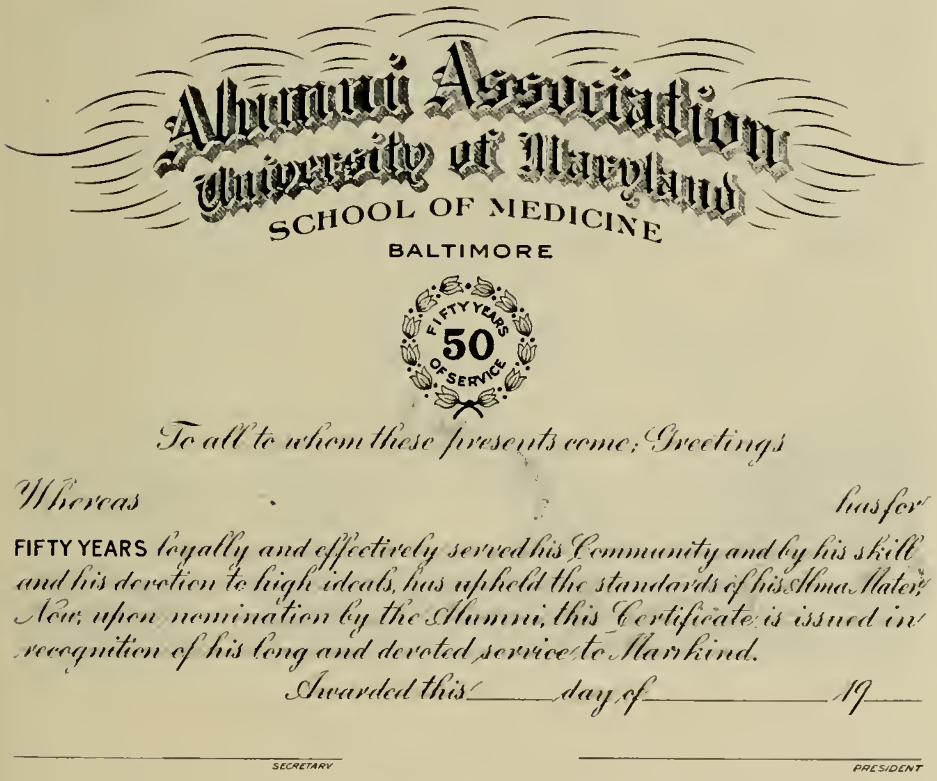
The following physicians are members of the class of 1900.

University of Maryland

James S. Akehurst
Daniel R. Bryson
Julian F. Chisholm
G. Latrobe Ewalt
Ernest H. Johnston
Rufus S. Kight
Lorenzo L. McPhail
Joseph B. O'Neill
Merton S. Pearre
Albinus Poole
James C. Robertson
Meredith I. Samuel
Wilbur F. Skillman
Edward S. Smith
William H. Smith
Irving J. Spear
Herschel J. Strickler
Walton L. Strother
Najub Takyud-Deen
John C. Wessell
Joel D. Whitaker
Jesse H. Whitehurst
Walter F. Wickes
Spry D. Willson

College of Physicians and Surgeons

Edward V. Arbaugh
Samson Benderly
George K. Collier
Robert C. Fleming
John F. Norris
Thornton W. Perkins
Caleb W. G. Rohrer
Arthur A. Shawkey
Dallas V. Smith



Alumni Association
University of Maryland
SCHOOL OF MEDICINE
BALTIMORE

FIFTY YEARS
50
OF SERVICE

To all to whom these presents come: Greetings

Whereas *has for* FIFTY YEARS *loyally and effectively served his Community and by his skill and his devotion to high ideals, has upheld the standards of his Alma Mater; Now, upon nomination by the Alumni, this Certificate is issued in recognition of his long and devoted service to Mankind.*

Awarded this ______ *day of* ____________ *19*____

______________________ SECRETARY

______________________ PRESIDENT

Baltimore Medical College

Guy F. Arnold
J. S. Buffaloe
George Burroughs
Parley C. Casto
Charles S. Cochrane
Wilmer C. Ensor
Fred Fernald
Benjamin F. Good
M. Bowman Hood
George W. Krumbine
Donald R. Kunkelman
Fenton E. MacCallum
Charles H. Mace
Julius G. Paider
Charles A. Schneider
Frank W. Smith
Robert P. Winterode

Percival S. Rossiter, Rear Admiral, U. S. N. (retired), class of 1895 is now residing at 111 N. Alfred Street, Alexandria, Virginia.

R. Adams Cowley, class of 1944, has recently been appointed Fellow in Surgery at the University Hospital, University of Michigan, Ann Arbor, Michigan.

William T. Raby, class of 1942, who completed his residency in medicine at the University Hospital on July 1, 1949, has announced the opening of his practice in Charlotte, North Carolina.

William L. Byerly, Jr., class of 1942, has entered the practice of surgery in Hartsville, South Carolina.

John N. Osburn stands before his grandfather's, father's and his own diploma. All are graduates of the University of Maryland in the classes of 1848, 1877 and 1909 respectively.

Three generations of physicians are represented in the Drs. Osburn all of whom are graduates of the University of Maryland.

The first of this line to study medicine was Abner Osburn who was born in Purcellville, Virginia in 1822. He was the grandson of an Abner Osburn who had practiced medicine in the same town for many years. As a youth he studied with his uncle, Dr. Jonathon Heaton and then entered the University of Maryland School of Medicine, graduating in 1848.

On December 5, 1853 Howard Osburn was born. He attended Virginia Military Institute and studied medicine with his father following which he entered the University of Maryland School of Medicine, graduating in the class of 1877. He returned to Rippon, West Virginia where he practiced until his death in 1931.

His son, John Nelson Osburn, was born on February 21, 1886 at Rippon, West Virginia. After graduating from Washington and Lee University, he completed his medical training at the University of Maryland, graduating in the class of 1909.

After four years of general practice in Martinsburg, West Virginia, he became resident at the Episcopal Eye and Ear Hospital in Washington, D. C. under the late Dr. William H. Wilmer.

After a period in the United States Navy, he specialized in ear, nose and throat and moved to Los Angeles, California where he has continued to practice industrial ophthalmology. Dr. Osburn is a diplomate of the American Board of Ophthalmology and recent Chief Surgeon of the Santa Fe Coast Line Association Hospital. His present address is 332 Marguerite Avenue, Corona Del Mar, California.

C. Hal Ingram, class of December 1943, who completed his residency in surgery at the University Hospital, is now in practice at High Point, North Carolina.

George D. Selby, class of 1936, has recently announced the opening of his office at 1801 K Street, N.W., Washington 6, D. C. His practice will be limited to ophthalmology.

At a meeting of the Advisory Board of the Alumni Association of the University of Maryland, Dr. William H. Triplett, class of 1911, was elected Vice-president of the General Alumni Association of the University of Maryland. Dr. Triplett has also recently been elected first Vice-president of the Association of Military Surgeons of the United States.

William D. McClung, class of 1940, has recently been appointed Fellow in Surgery at the Lahey Clinic, Boston.

Walter J. Benavent, Class of 1946 will be associated with Dr. Edward A. Kitlowski in the practice of plastic surgery, following completion of his surgical residency at St. Agnes Hospital in June, 1950.

John C. Morgan, Class of 1943 has recently been appointed Fellow in Thoracic Surgery at the Overholt Chest Clinic, Boston. For the past six months Doctor Morgan has been associated with the Department of Pathology at the Medical School.

William E. Lampley, Class of 1944 is now assistant chief of the Surgical Service, United States Marine Hospital, Savannah, Georgia.

Medical Alumnus Honored

As guest of honor at the annual Homecoming Day at College Park on October 29, 1949, R. Sumter Griffith of Waynesboro, Virginia, class of 1886, College of Physicians and Surgeons, led the parade of almost 1500 Alumni who participated in the Homecoming Exercises.

Dr. Griffith, who is 88 years of age, is still in practice and is quite active in Alumni affairs.

Correspondence

November 4, 1949

I wish to thank the Alumni Association for the certificate awarded me for fifty years practice of medicine. I prize it more than any other award I have had in the long years of public service.

Sincerely yours,
William E. Lightle, M.D. Class of 1894 B. M. C.
20 Main Street, North Berwick, Maine

November 8, 1949

Thank you very much for the beautiful certificate which I received recently. It is a fine gesture on the part of Alma Mater to grant certificates to the men who have served fifty or more years in the service of suffering humanity.

Sorry I was unable to attend, but hope next June to be present at the 1950 celebration.

Yours sincerely,
Hugh F. Cook, M.D. Class of 1896 P & S

October 26, 1949

I thank the Alumni Association for the very attractive certificate of fifty years service rendered to the community as well as to the University of Maryland. I accept this in the spirit in which it is intended and shall prize it most highly.

Yours very sincerely,
Harvey G. Beck, M.D. Class of 1896 P & S

"MARYLAND" YOUR ALUMNI MAGAZINE

The general Alumni Association of the University of Maryland publishes a bimonthly magazine, *Maryland*, which shows an increasing standard of excellency, with a wide coverage of all Alumni activities with respect to the University of Maryland and with particular emphasis directed to each of the several schools which comprise the University. Aside from a liberal amount of Alumni news, feature articles concerning the Medical School, University Hospital and the School of Nursing are published from time to time.

Maryland may be obtained at the rate of $3.00 per year by forwarding your subscription to the Alumni Office at College Park, Maryland.

Dr. Miles E. Drake, class of 1944 and formerly resident in pediatrics at the University Hospital, is now a Fellow at the Philadelphia Childrens' Hospital where he is working on a problem pertaining to hepatitis in children.

Dr. Ruth Baldwin, class of December, 1943, has recently completed a Fellowship in electroencephalography under Dr. William Lenox at the Seizure Clinic, Boston, Massachusetts.

Charles E. Gill, class of 1927, reports that in the New England group of Maryland Alumni there are now 364 practicing physicians in a six state area. This group of Maryland Alumni has been meeting periodically since 1936. The New England group of Alumni is planning to hold its annual meeting on May 17, 1950 in Boston, in conjunction with the annual meeting of the Massachusetts Medical Society. Dr. Gill who is State District Health Officer, Pittsfield, Massachusetts, is Secretary-Treasurer of the Alumni group.

ALUMNI ADDRESSES

The Medical School and the Alumni Association have experienced increasing difficulty with respect to the Alumni mailing list which includes the *Bulletin*. Since the American Medical Association has not issued its Directory of Physicians since

1942, the Medical School and the *Bulletin* are dependent upon their own resources in maintaining an accurate mailing list.

Until such time as the American Medical Association Directory is published, the School and *Bulletin* will mail all regular notices and journals to those whose accurate address is known. Upon return of any printed material on which a forwarding address is indicated, a card will be sent requesting confirmation of the indicated change. If a reply is not received, the address will be temporarily removed from the mailing list. If a publication or communication is returned without a forwarding address, the address will also be temporarily removed from the mailing list.

In the event that your receipt of printed matter from the University ceases, the School and the *Bulletin* request that you notify Mrs. Minette E. Scott, Alumni Office, University of Maryland School of Medicine, Lombard and Greene Streets, Baltimore 1, Maryland immediately, giving your correct address and any anticipated change.

This procedure is sufficient to continue your receipt of the *Bulletin* and such other data from the School which may concern you.

OBITUARIES

DR. G. CARROLL LOCKARD

Dr. G. Carroll Lockard died in the University Hospital at 5:15 A.M. Sunday, August 7th, 1949. He had been operated on Wednesday, August 3rd for a diagnosed early carcinoma at the rectosigmoid junction, and an abdomino-perineal excision had been done. He went through the operation well and was returned to his room in satisfactory condition. Suddenly at 4:30 on Saturday afternoon he suffered a cerebral hemorrhage with unconsciousness which deepened until his death about 12 hours later.

Dr. Lockard was a native of Baltimore and was born February 22, 1882, the son of James Griffith Lockard and Marian Jane Riddle Lockard. He graduated in medicine from the University of Maryland in May 1903, so that he was a few months past his 21st birthday when he graduated. Like the majority of medical students 50 years ago, he went directly from high school to the study of medicine. He had an excellent mind and was interested and industrious, and graduated with honors. During his senior year he was clinical assistant in the University Hospital which closely resembles a junior interneship at the present time. In another respect, his early medical life illustrates the sharp changes in medical education in the last half century. He did not apply for an interneship and went directly into private practice.

But the difference is not so great as it seems. Dr. Lockard had in him the ability to train himself. He and I graduated one year apart, and I spent 6 years in the University Hospital 4 of these years as resident surgeon, and senior house officer, and when we began to emerge as teachers and hospital staff members, I never was able to observe that he lacked anything of the training six hospital years had given me.

He was closely associated, with the late Dr. Charles W. Mitchell who was an excellent teacher and had a brilliant mind with a very interesting and stimulating personality. Dr. Mitchell was greatly admired by medical students whose nickname for him was "little Charlie". Later Dr. Lockard and Dr. Gordon Wilson had offices together, and Dr. Wilson also was well equipped with a fine mind, good training, and an attractive personality. Another factor in Dr. Lockard's self-training was his great interest in books. He gradually built up a good library many volumes of which were on medical subjects, and a book, to him, meant something to read, ponder over and to remember. Still another factor in his self-training was that immediately after graduating he began to teach. In 1904 he was appointed Assistant in Pathology and Bacteriology in the Medical School of the University. Later he became Associate in Medicine, and two years later he was made Assistant Professor of Clinical Medicine and Pediatrics. He was appointed Professor of Clinical Medicine in 1918 and during World War I was, for a time, acting head of the Department of Medicine.

DR. G. CARROLL LOCKARD

He was an active and useful member of the Medical and Chirurgical Faculty of Maryland, and of the Baltimore City Medical Society. He was a former vice-president of both of the above societies. In 1940 he was president of the Baltimore City Medical Society, and in 1945, president of the Medical and Chirurgical Faculty of Maryland. The committee in charge of medical officer procurement in World War I put him on the list of essential teachers for the University of Maryland. Dr. Lockard was a member of Appeal Board No. 1, and at the time of his death was a member of the Library Committee and the Committee on Constitution and By-laws of the Medical and Chirurgical Faculty.

He was a member of the American Medical Association, the Southern Medical

Association, a Fellow of the American College of Physicians and a member of the Committee on Medical Care of Maryland.

He was also a member of the Monthly Medical Reunion of which he was chairman for a number of years, and a member of the Splint Club. For many years Dr. Lockard was chief medical consultant to the Chief Surgeon of the Baltimore and Ohio Railroad.

Dr. Lockard was a modest man with a retiring disposition. In his speech he showed an interesting contradiction. He possessed a sharp and trenchant wit but his caustic sallies were directed toward those whom he liked.

Dr. Lockard's interests and activities fell into a number of groups. First came his family, his home and his books. When his day's work was over he wanted to be home, and was more contented there than elsewhere. Then came hospital and private practice, and closely allied with these, both in time and space, his interest in teaching both undergraduates and hospital house officers. Dr. Lockard's interest also was in the State and City Medical Society and the other medical clubs of which he was a member; and lastly, the frequent meetings that the hospital practice of medicine brings about between men who admire one another, and between whom there is a real feeling of affection.

The framework upon which his life's structure was built, was made up of many different segments welded together. Chief among these were intelligence, courage, understanding, sincerity and loyalty.

Arthur M. Shipley, M.D.

DR. HERBERT HODGE HAYNES

Dr. Herbert H. Haynes (P. & S. Class of 1908) died of coronary occlusion on June 2, 1949. Dr. Haynes was a general surgeon of distinction and a surgical inventor of national repute. He introduced new operations and operative techniques, particularly in the field of abdominal surgery. Many of these were published in the scientific literature and were well received.

During the first World War, when serving as a captain with the Medical Corps at Base Hospital No. 45 in France, he developed the skeletal fixation splint, later known as the Haynes splint which is widely used today. Another of his contributions to medicine was a new type of hospital bed.

After his graduation from the College of Physicians and Surgeons, Dr. Haynes remained there as a teacher of anatomy for two years. In 1910 he went into partnership with his brother, Dr. Robert Haynes, at Clarksburg, West Virginia, where he practised surgery for thirty nine years. He served on the staffs of the Union Protestant and St. Mary's Hospitals, and was a member of the American Board of Surgery, the American College of Surgeons, the American Medical Association, the Southern Medical Association, the Southern Surgical Conference, the American Association of Bone and Joint Surgeons and the Harrison County Medical Society.

Above all else Dr. Haynes was a humanitarian of outstanding forthrightness and character. He was courteous and kindly to everyone, regardless of station. His ready smile of greeting was ever friendly, his sense of humor never failing, but with these pleasing attributes there was a character of steel. The world has lost a good physician and those who knew him, a great benefactor and friend. The good deeds of this man will live on.

DR. HERBERT HODGE HAYNES

Budd J. Reaser, class of 1909 died on August 10, 1949 at the age of 66. Following his graduation, Dr. Reaser completed his internship at the Pottstown Hospital and then moved to Martin's Creek, Pennsylvania where he practiced until his death.

Joseph L. Valentini, class of 1907, died after a protracted illness on October 2, 1949, at the age of 63.

Born on May 31, 1886, the son of the late Dr. Joseph J. Valentini, he graduated from the University of Maryland School of Medicine in 1907. Until 1910 he studied abroad and upon the death of his father began practice in Baltimore. Closely associated with Italian, Polish and American life in Baltimore and devoting a large portion of his practice to obstetrics, he became well-known among thousands of East Baltimoreans.

James Kyner Timanus, class of 1949, died on September 17, 1949 together with his wife, of burns received when the Canadian Steamship Noronic was destroyed by fire.

Dr. Timanus who was born on March 3, 1924, is survived by two children, a son aged two and a daughter aged six months.

He was to have begun his internship in October at St. Luke's Hospital, Cleveland, Ohio.

Allen, Albert Bertram, Mt. Clemens, Mich.; P & S, class of 1895; aged 75; died, July 5, 1949, of coronary thrombosis.

Cather, Rae Hagan, Barberton, O.; P & S, class of 1914; aged 61; died, June 11, 1949, of coronary occlusion.

Cook, Charles C., Baltimore, Md.; class of 1901; aged 84; died, July 6, 1949, of cerebrovascular accident.

Doughton, James Lee, Sparta, N. C.; P & S, class of 1893; aged 79; died, August 23, 1949.

Erskine, Elsworth DeMarr, Steubenville, O.; B.M.C., class of 1893; aged 79; served during World War I; died, July 8, 1949, of an infected cyst of the eye.

Hedges, Frank Hill, Frederick, Md.; class of 1898; aged 78; died, May 22, 1949.

Hutchinson, Chessman Palmer, Danielson, Conn.; B.M.C., class of 1893; aged 88; died, April 13, 1949.

Jonas, John Frank, Marion, N. C.; B.M.C., class of 1903; aged 76; died, May 28, 1949.

Kaufman, Edward Leo, Powellton, W. Va.; class of 1920; aged 56; died, August 31, 1949, of injuries received in an automobile accident.

Levinson, Frank, Baltimore, Md.; class of 1911; aged 59; died, recently, of cerebral hemorrhage and arteriosclerosis.

McCormick, G. Carville, Tampa, Fla.; class of 1890; aged 84; died, June 19, 1949, of arteriosclerotic heart disease.

Miller, Tempest C., Abbottstown, Pa.; class of 1889; aged 84; died, August 4, 1949, of coronary occlusion.

Poulton, James Emery, Baltimore, Md.; B.M.C., class of 1906; aged 69; died, recently, of coronary thrombosis.

Ries, Ferdinand August, Baltimore, Md.; class of 1921; aged 50; died recently.

Schuyler, Albert Lewis, Colchester, Conn.; B.M.C., class of 1895; aged 77; died, May 25, 1949.

Silverman, Abraham, Philadelphia, Pa.; B.M.C., class of 1907; aged 63; died, July 23, 1949, of squamous cell carcinoma of the nose.

Skinner, Ralph Douglas, New York, N. Y.; B.M.C., class of 1905; aged 71; died, recently of cerebral hemorrhage.

Sowers, Walter Franklin, Baltimore, Md.; class of 1906, aged 67; died, May 31, 1949.

Spangler, Paul Carrington, Princeton, W. Va.; P&.S, class of 1912; aged 61; died, recently, of cardiac aneurysm following coronary occlusion.

Tierney, Thomas Francis, Hudson, Mass.; B.M.C., class of 1901; aged 72; served during World War I; died, July 24, 1949, of heart disease.

White, Joseph Meade, Maj. U.S.A. (ret'd), Poolesville, Md.; P & S, class of 1897; aged 77; served during Spanish-American War and World War I; died, May 12, 1949, of coronary thrombosis.

Yagle, George N., Red Lion, Pa.; P & S, class of 1895; aged 81; died, April 23, 1949, of arteriosclerosis.

BOOK REVIEWS

PABLO OSVALDO WOLFF. *Marihuana in Latin America—The Threat it Constitutes.* Washington, D. C.: The Linacre Press, Inc. 56 pp. $1.50

The treatise on Marihuana in Latin America is a very timely publication and adds much to our understanding of the marihuana problem in Central and South America. It supplements and augments the LaGuardia Report and in some respects excels this Report in its contribution to the sociologic aspects of the use of marihuana.

In general the brochure deals with all of the economic and sociologic facets of the problem, including the botanical aspects of the growing of the plant. Where marihuana constitutes a very special problem, as it does in Mexico and Cuba, entire chapters are devoted to the sociologic aspects in these countries.

It is noted that the psychiatric manifestations of the smoking of marihuana may be mistaken for schizophrenic, affective, paranoic, organic, psychoneurotic or psychopathic reaction types. The writer reviews at length the various diagnoses assigned to the mental pattern of the marihuana smoker by psychiatrists the world over.

Studies made by the neuropsychiatrist Dr. Luis Muniz Angulo found that those using the drug could be conveniently divided into the following groups: Those that were guilty of: attacks on society, attacks on sexual or moral integrity, attacks on property, attacks on individuals, and the nonaggressive.

The writer expresses the view that while opium cures and punishes like a god, and while it can be a sublime gift, marihuana serves only as an infernal scourge. It has no place in the rational armamentarium of the physician, and as a drug used for an escape from boredom and disenchantment, it inflicts blows upon its addicts, renders them depraved and degrades them physically and morally.

The book should serve to stimulate the lay and medical members of the Latin American countries to fight this menace.

JOHN C. KRANTZ, JR.

BULLETIN ON NARCOTICS

Published Quarterly by the United Nations Department of Social Affairs,
Lake Success, N. Y.

Subscription $2.00 annually

Recently inaugurated by the United Nations, the *Bulletin on Narcotics* becomes the official organ of the United Nations Commission on International Control of Narcotic Drugs. In the first number issued in October, 1949, articles of general interest concerning control of narcotics by the United Nations, a survey of opium production throughout the world, the survey of coca products and the report of the fourth session of the Commission on Narcotic Drugs completes the issue.

The *Bulletin* thus becomes the official source of information concerning this world wide problem which is now assumed by the United Nations following the traditional activities of the League of Nations. It should be of interest to all those concerned with problems of narcotics control.

Bulletin OF
THE SCHOOL OF MEDICINE
UNIVERSITY OF MARYLAND

VOLUME 35 — *April, 1950* — NUMBER 2

EDITORIAL

PROCEED CAUTIOUSLY

When, sometime in the future, someone writes the history of medicine a notable chapter will be that one dealing with the attempted control of infections undertaken during the first half of this century. To be more exact, the historian will record the remarkable progress made between 1915 and 1950.

During World War I tremendous strides were made in controlling infections in thousands of war injuries. These wounds were of the character, which, in previous wars, were responsible for many amputations of various extremities, or which caused the death of the unfortunate victim of a war wound, as a result of uncontrollable spreading infection or to septicaemias. The chlorination (Dakin's Solution) of open wounds was the first physiologic attempt to sterilize infected wounds, and salvaged thousands of lives and limbs.

Following World War I investigators pursued this idea and continued progress in the control of infections was noted. Their application to other than open wounds was made possible; for illustration, the pleural cavity especially in early empyema secondary to a pneumonia. Clinicians were able by closed methods, (tidal drainage) in many instances to control this infection within the pleural space and thus to avoid the unpleasant complication of wide open drainage, collapsed lung, with its attendant morbidity.

With the introduction of the sulfa compounds a new era was initiated. Whether infections were "medical" or "surgical", there seemed to be little difference. The pneumonias formerly so common and responsible for such extended illnesses and complications were controlled, aborted or cured in an almost miraculous manner.

When penicillin was introduced, its ability to combat many infections was regarded as phenomenal. The experiences in the military forces attest to this fact. Never in the history of wars has the physican been able to contribute to the recovery of war wounded as he was in World War II. All types of severe wounds including major chest and abdominal varieties could and did receive definitive treatment in the zone of combat. Following penicillin other antibiotics were discovered, investigated and used by the physician in order to control infection.

Continued experimental and clinical use of these products have demonstrated

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their values, and beyond any doubt they have been shown to be individual. Gram negative and Gram positive bacteria do not respond in the same way to each antibiotic employed. Through the years, bacteriologists and clinicians, whether internists or surgeons, have learned of nature's balance of micro-organisms which may be encountered in various parts of the human body. This is well illustrated in the flora of bacteria to be found in the lower gastro-intestinal tract. When any one of these organisms gains supremacy, trouble will likely follow, and this is especially true when they are encountered outside of the gastro-intestinal tract.

Scientific discoveries have been responsible for many advancements in the practice of medicine, but in no way have they lightened the burden on the physician for making a diagnosis or outlining treatment. The very fact that the newer remedies (sulfa compounds and antibiotics) have such limited and specific influences on bacteria makes it imperative for the clinician to identify the offending organism if possible, and then to use the one *individual antibiotic* indicated. The promiscuous use of these valuable remedies often leads to states of actual chaos. When a specific antibiotic is used, frequently the infection is immediately controlled. Otherwise nature's balance is broken and the uncontrolled organism gains supremacy. This is well illustrated in cases where the *Escherichia coli* is found either in pure or mixed culture in locations usually uncommon such as in the mouth, neck, bloodstream, etc.

Infections within the abdomen formerly considered as definitely surgical have unwisely been treated with antibiotics in a nonspecific way only to have obscure subdiaphragmatic abscesses develop.

Sensitivity to various agents is also too frequently noted and the inadvisable use of any of these excellent remedies may contribute to this unfortunate condition, and later when the patient may need one of them, it will be unsafe to employ the one indicated.

Every effort should be made to identify the offending micro-organism before advising the use of these life-saving remedies thereby following the old admonition, "look before you leap." Good, sound judgment will make possible a direct attack on the invading organism and will increase the possibility of effecting a cure.

Charles Reid Edwards, M.D.

AUREOMYCIN AND CHLOROMYCETIN IN THE TREATMENT OF EXPERIMENTAL AND CLINICAL PERITONITIS* †

GEORGE H. YEAGER, M.D., WILLIAM L. BYERLY, JR., M.D., WILLIAM A. HOLBROOK, JR., M.D., WILLIAM D. LYNN, M.D. AND THOMAS G. BARNES, JR., M.D.

BALTIMORE, MARYLAND

In an attempt to evaluate the comparative effectiveness of aureomycin and chloromycetin (chloramphenicol) in experimental peritonitis, two types of studies were made on dogs. The first study attempted to show the identical effectiveness of these antibiotics on a mixed type of infection similar to that encountered in human peritonitis, complicating perforation of the appendix. The second series of observations was essentially as in the first, except that the protective barriers of the spleen and omentum were removed (1, 2).

The technique used to produce peritonitis in Study I, was introduced by Bower and co-workers (3), and modified by Fauley and his associates (4). Steinberg and Martin (5) have shown that a peritoneal infection diffuses throughout the peritoneal cavity fairly promptly after perforation of the bowel takes place.

EXPERIMENTAL STUDIES

Series 1. Animals were selected at random from stray mongrel adult dogs, weighing from twelve to twenty pounds, excluding pregnant dogs, and dogs previously operated upon. The abdomen was shaved, scrubbed and painted with iodine and alcohol. Aseptic technique was rigidly observed. Under intravenous nembutal sodium anesthesia, supplemented with open drop ether when necessary, the abdomen was opened through a right rectus incision and the appendix drawn into the wound. The mesenteric attachments were divided, and the appendiceal vessels were clamped, divided and ligated with silk. In order to minimize a tendency toward intussusception, the appendix was ligated one centimeter from its base with three heavy silk ligatures, as shown in Figure 1. The distal half of the appendix was then traumatized with a crushing clamp, the viscera replaced, and the incision closed in layers with silk. No drains were used and no dressings were applied. Immediately following the operation, each animal received 50 cc of castor oil by stomach tube.

No attempt was made to withhold food postoperatively, and no intravenous fluids were given. Temperature and leukocyte counts were determined every other day. Necropsy was performed on all fatalities shortly after death. All animals operated upon are included in the series. The animals that survived were examined 14 days after operation. Culture studies were made of the peritoneal exudate in all the animals.

Ten animals were used as controls. Of these, eight died of acute, diffuse peritonitis, six of them within the first 4 days. Two animals survived, a survival rate of 20 per cent.

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* From the Department of Surgery, School of Medicine, University of Maryland, Baltimore, Maryland.

† Received for publication January 10, 1950.

Ten animals were treated with aureomycin*, starting 24 hours postoperatively, and continuing for 8 days. The dosage was 100 mgs. orally 4 times daily. Of these, one died on the ninth day. Nine animals survived, a survival rate of 90 per cent.

Ten animals were treated with chloromycetin†, starting 24 hours postoperatively, and continuing for 8 days. The initial dose was 250 mgs. followed by a dosage of 62.5 mgs. every 4 hours. Two of the animals died, both within the first 5 days. Eight animals survived, a survival rate of 80 per cent.

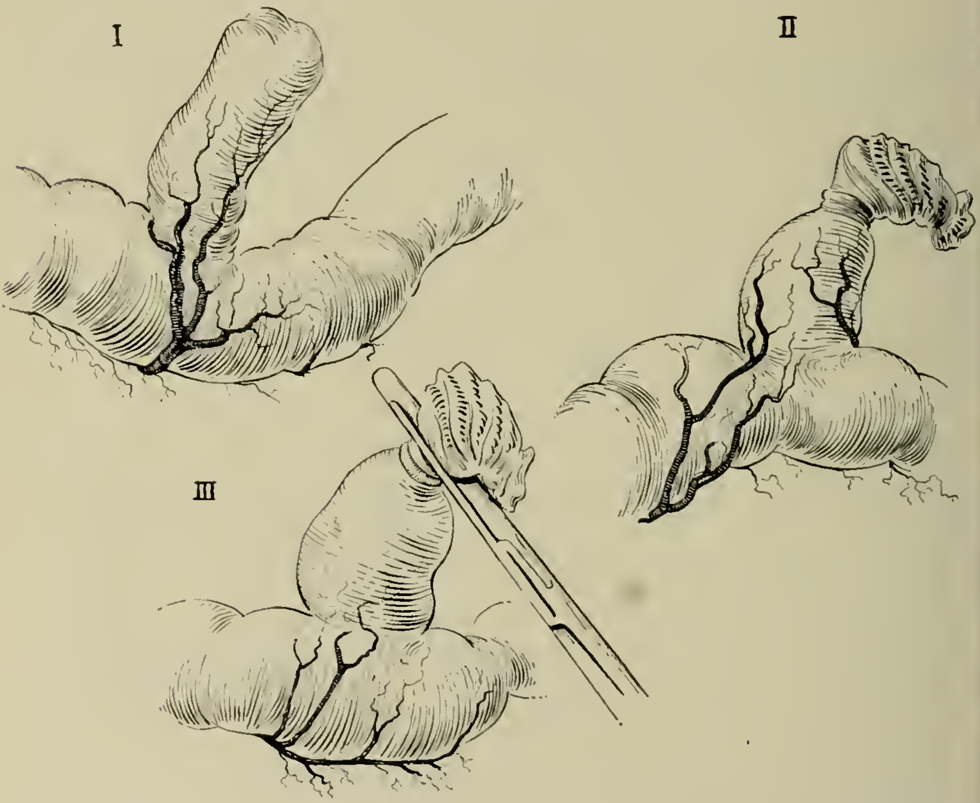

Fig. 1. Technic for producing experimental peritonitis in dogs. (I) Dissection of stump and ligation of mesenteric attachments. (II) Crushing of distal end. (III) Ligation with three strands of heavy silk. Ligation for diagrammatic purposes if further away from the base than actually practised.

Table 1 gives a comparison of the survival rates. The nine surviving animals treated with aureomycin appeared less toxic and more lively than the eight surviving animals treated with chloromycetin. The leukocyte response and temperature rise were similar, as can be seen by Figs. 2, 3 and 4. The highest leukocyte count and temperature recorded for the animals treated with aureomycin was 30,600 and 104 F. respectively.

* The aureomycin used in this study was supplied by a grant from the Lederle Laboratories Division, American Cyanamid Company.

† The chloromycetin used in this study was supplied by the Research Division, Parke, Davis & Company.

The highest temperature recorded in the animals treated with chloromycetin was 105.8 F. The highest leukocyte count was 40,600.

All animals were autopsied as soon after death as possible, and the peritoneal exudate cultured. In addition, all dogs that survived 14 days were sacrificed and studied bacteriologically. Table 2 shows the organisms cultured. Five control animals showed a predominance of *Escherichia coli*, while only four treated with aureomycin showed this organism. It is interesting to note that of the ten animals treated with aureomycin, eight showed various types of proteus organisms, while only two of the ten animals treated with chloromycetin showed this organism.

TABLE 1

Study I. Comparison of the survival rate in the treated and untreated animals

	NO. DOGS	2 DAY SURVIVALS	4 DAY SURVIVALS	8 DAY SURVIVALS	14 DAY SURVIVALS
Controls	10	8	6	4	2
Aureomycin	10	10	10	10	9
Chloromycetin	10	10	9	8	8

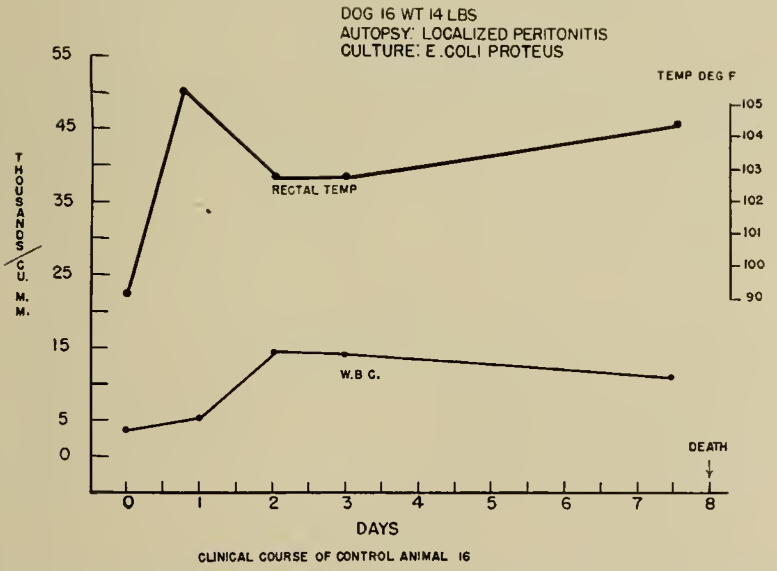

FIG. 2. Course of control animal dying on the eighth postoperative day. Note sharp rise of temperature during the first twenty-four hours postoperatively. Minimum temperature (R) postoperatively, 103 F. with leukocytosis of 15,000.

Series II. The same method of producing peritonitis was used as in Series I. In addition, the spleen and omentum were removed. No temperature readings or leukocyte counts were recorded. All animals that died were autopsied immediately after death. Those surviving were sacrificed on the seventh day.

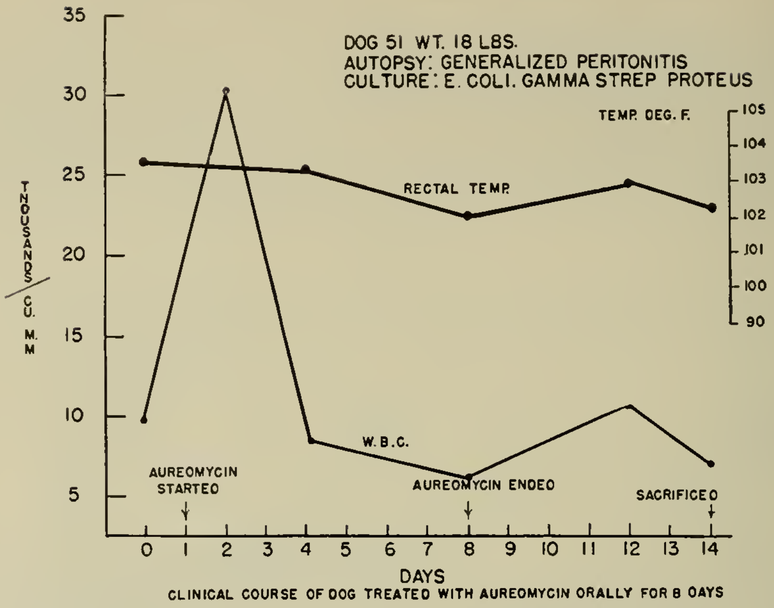

FIG. 3. Postoperative course of dog treated with aureomycin. Maximum temperature (R) 103 F. with sharp rise of leukocytosis to 30,000 and dropping to within normal limits on the fourth postoperative day.

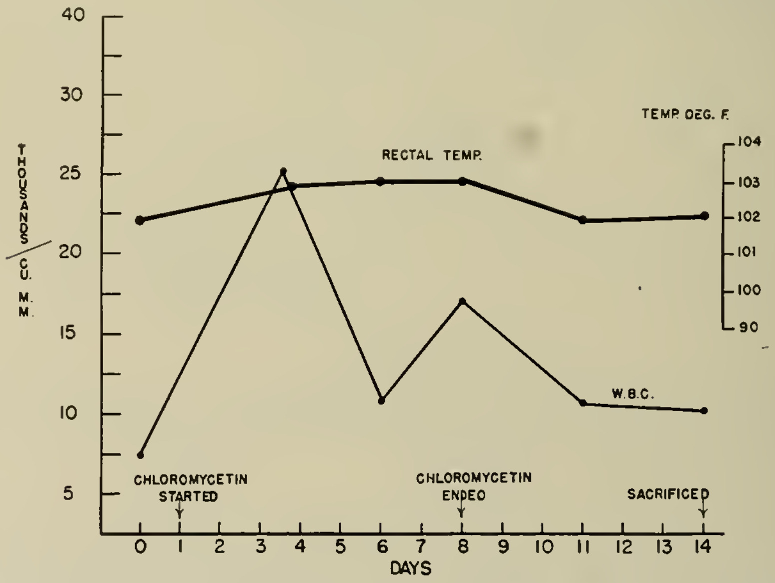

FIG. 4. Postoperative course of dog treated with chloromycetin. Maximum temperature (R) 103 F. with leukocytosis of 25,000.

II-a—Control

Five animals were used as controls. Three survived the 7 day period, while two died within the first 2 days. All of the control animals, at necropsy, showed a diffuse peritonitis with but slight tendency to wall off the gangrenous, perforated appendix.

II-b—Aureomycin

Five animals were treated with aureomycin beginning 6 hours postoperatively. The dosage was 100 mgs. every 8 hours for 6 days. All of the animals survived. At necropsy, the peritoneal cavity of three animals was free from infection, with a well walled off abscess about the cecum. Two animals had a diffuse peritonitis with walling off of their gangrenous cecum, the tip of which had sloughed away.

II-c—Chloromycetin

Five animals were treated with chloromycetin beginning 6 hours postoperatively. The dosage was 250 mgs. initially followed by 62.5 mgs. every 6 hours for 6 days.

TABLE 2

Study I. Incidence of bacteria cultures from peritoneal exudate of dogs with experimental peritonitis

ORGANISM	CONTROLS 10 DOGS	STREPTOMYCIN 10 DOGS	AUREOMYCIN 10 DOGS	CHLOROMYCETIN 10 DOGS
Escherichia coli	5	8	4	10
Gamma streptococcus	4	5	3	3
Proteus	4	2	8	2
Clostridia perfringes	5	3	1	7
Staphylococcus albus	4	0	0	1
Streptococcus viridans	0	2	0	5
Beta-hemolytic streptococcus	1	2	0	5
Staphylococcus aureus	2	0	0	0

TABLE 3

Study II. Post mortem peritoneal findings

GROUP	ANIMALS NOT SURVIVING 7 DAYS		ANIMALS SURVIVING 7 DAYS	
	Diffuse peritonitis	Local abscess	Diffuse peritonitis	Local abscess
Control	2	0	3	0
Aureomycin	0	0	2	3
Chloromycetin	1	0	4	0

One animal died within 36 hours. The remaining four survived the full 7 days of observation, and were then sacrificed. At necropsy, all animals showed a diffuse peritonitis. An attempt to wall off the perforated, gangrenous cecum was noted but the adhesions were quite friable, and the adherent loops of intestine were easily separated. In one animal, the gangrenous appendix, still attached to the cecum, was found lying free in the abdominal cavity with no attempt at localization.

Table 3 gives a comparison of the character of peritoneal reaction found in Series II.

Table 4 compares the organisms cultured in the treated and untreated animals. Eight different types of organisms were cultured from the peritoneal exudate of the control animals, with a total incidence of twenty-two positive cultures. Six types of organisms, with a total incidence of fifteen positive cultures, were cultured from the animals treated with chloromycetin, while in the group treated with aureomycin, four types of organisms were cultured with a total incidence of eleven positive cultures. There were two positive cultures for Gram positive cocci in the group treated with aureomycin, in contrast to six in the group treated with chloromycetin. Gram negative coliform rods were cultured in one animal treated with aureomycin, in comparison to three in those treated with chloromycetin. Comparatively, chloromycetin was effective against proteus and streptococcus fecalis organisms, Altemeier's observations indicate that chloromycetin is effective against clostridial infections. However, in our study, four positive cultures out of a possible five were obtained for clostridial organisms.

TABLE 4

Study II. Organisms cultured from peritoneal exudate of treated and untreated animals

ORGANISM	CONTROL	AUREOMYCIN	CHLOROMYCETIN
Streptococcus hemolyticus	3	2	1
Streptococcus non-hemolyticus	3		3
Streptococcus viridans			
Escherichia coli	4	1	3
Staphylococcus albus	2		2
Clostridia group	5		4
Proteus vulgaris	2	4	2
Streptococcus fecalis	2	4	
Gram negative rod anerobe	1		

CLINICAL STUDIES

Based on the experimental data at hand, aureomycin was used in the treatment of a series of patients with peritonitis secondary to appendicitis. Organisms cultured from each case of peritonitis treated with aureomycin were tested for sensitivity to chloromycetin as well as aureomycin. However, until some of the experimental studies can be repeated to further evaluate the efficacy of chloromycetin in higher concentration, its clinical inclusion in this study was not deemed warranted.

The clinical phase of this study comprises sixteen patients, thirteen of whom had immediate surgery. All operative cases had positive peritoneal cultures. There were eleven cases of spreading peritonitis, with nine positive cultures for Escherichia coli and one each for *beta-hemolytic streptococci* and *clostridia welchii*. Two cases of localized peritonitis cultured both Escherichia coli and *viridans streptococcus*. The remaining three cases included in this study were treated supportively with aureomycin and subsequent elective internal abdominal exploration.

Those patients with spreading peritonitis were treated surgically by removal of the appendix and drainage. Their age range was 1½ to 39 years. Mortality was zero. The average number of hospital days was 15.8. A typical case is summarized.

C. L. B., No. 20680. White female, aged 2½ years, admitted to the University Hospital with a complaint of abdominal pain of 3 days duration. Two days before admission, she had complained of severe right lower quadrant pain. On the day of admission, vomiting was persistent.

The admission examination revealed a rectal temperature of 103 F., pulse 132 and respirations 32. Dehydration was marked. The abdomen was distended and silent. There was generalized abdominal rigidity, with marked tenderness in the right lower quadrant. A roentgenologic examination of the abdomen revealed small as well as large bowel distention. The leukocyte count was 16,400 and hemoglobin 85 per cent. The urea nitrogen was 33 mg per cent; CO_2 48 vol. per cent, and chlorides 348 mg per cent. A urinalysis showed a trace of albumin and sugar.

Intravenous fluids, penicillin, and streptomycin were administered immediately, and gastric suction initiated. Eighteen hours after admission, an appendectomy with drainage was performed. The appendix was gangrenous and perforated in its distal third. There was a diffuse, purulent peritonitis. Bacteriologic culture revealed Escherichia coli and *B. Alcaligenes*. Postoperatively, she was given aureomycin 0.5 grams every 4 hours, and general supportive measures. No other antibiotic was used. Convalescence was without event, with discharge from the hospital on the eighth postoperative day.

LOCALIZED PERITONITIS

The cases of localized peritonitis were aged 18 and 71 years respectively. Drainage was established in each, with removal of the appendix in the younger patient. The average number of hospital days was 9.5. One case is summarized.

L. M. K., No. 21105. White female, aged 71, admitted to the University Hospital with a complaint of abdominal pain of 5 days duration. Her illness began with sudden, acute, epigastric distress, which persisted without radiation in that area for 3 days. On the fourth day, it localized in the right lower quadrant. Bowel movements were normal.

Admission examination revealed a temperature of 99.8 F.; leukocyte count of 9,600, with normal differential. The abdomen was not distended. The percussion note was tympanitic with normal peristaltic sounds. A hard, tender, fixed mass measuring 3 centimeters in diameter was palpated in the right lower quadrant. No other masses or viscera could be felt. A rectal examination was negative.

At operation, under spinal anesthesia, a hard, indurated, fluctuant mass was found in the retrocecal, retroperitoneal area, with an adherent cecum. The abscess cavity which contained several fecaliths was evacuated. No attempt was made to remove the appendix. Drainage was established. Escherichia coli and *viridans streptococcus* were cultured from the abscess cavity.

Postoperatively, she was given 500 mgs. of aureomycin every 4 hours, orally, for 24 hours. Because of nausea and vomiting, intramuscular aureomycin, 50 mgs. every 4 hours was substituted. After 24 hours, it was possible to resume oral medication. Postoperative distention was controlled by gastric suction. Convalescence was relatively without event. Drains were removed on the eleventh day, and the patient was discharged from the hospital on the twelfth postoperative day.

Comment. The role of aureomycin in this case did not, in itself, appear dramatic. However, the uneventful postoperative course, and minimal toxicity of this elderly patient was quite striking.

Three patients with clinical evidence of an acute inflammatory reaction in the peritoneal cavity were treated with aureomycin and nonsurgical interventon. Two of these subsequently had an interval exploratory laparotomy, one of whom showed evidence of a recent acute appendicitis with perforation, and the other, of an acute peritoneal infection complicating sigmoid diverticulitis. The clinical history and objective findings of these three cases suggested acute appendicitis with spreading peritonitis. A brief summary of these cases follows.

W. T., No. 21376. Colored male, aged 4, admitted to the University Hospital on February 9, 1949 with a history of pain in the left lower abdomen of 2 days duration. Pain had been severe and cramplike in character and associated with vomiting. Enemas had been moderately effective, without evidence of blood or mucous.

The admission temperature was 101.2 F. and leukocyte count 11,500. There was muscle splinting of the entire abdominal wall with board-like rigidity in the left lower abdomen. Tenderness was extreme in the left lower quadrant, and moderate elsewhere. Peristalsis was audible over the entire abdomen, except in the left lower quadrant. A rectal examination confirmed the impression of a mass in the left pelvic region. A tentative diagnosis of an abscess in this region was made.

The patient was immediately given 50 mgs. of aureomycin intramuscularly, and then placed on a regimen of 25 mgs. of aureomycin intramuscularly every 4 hours, supplemented with an oral dose of 500 mgs. every 6 hours. At the end of 6 days, parenteral medication was discontinued and the oral dose of aureomycin was reduced to 250 mgs. every 6 hours. This level was maintained for 3 days, and then discontinued.

Thirty-six hours after admission, abdominal tenderness had disappeared except in the left lower quadrant. Fifty hours after admission, there was but slight tenderness in the left lower abdomen and the mass which shortly after admission had become well defined, appeared to be regressing rapidly.

Fourteen days after admission, he was discharged from the hospital with negative findings.

On April 5, 1949, he was re-admitted to the University Hospital for an elective exploratory laparotomy. During the interval of discharge and re-admission, he had been asymptomatic.

Exploratory laparotomy following this admission revealed a mobile cecum, pulled somewhat to the left. The appendix, which was about 4 cm. in length, extended transversely across the pelvic brim, and was adherent to the superior surface of the bladder and peritoneum of the left iliac region. Loops of ileum were adherent anteriorly. Adhesions were friable. No free pus was encountered. The appendix was removed, and the stump invaginated. The middle third of the appendix was about one centimeter in diameter and contained a thick, purulent material. Convalescence was entirely without event.

W. R., No. 22169. A white male, aged 30, admitted to the University Hospital on March 6, 1949 complaining of lower abdominal pain of 11 hours duration. He had been repeatedly hospitalized since 1941 for chronic infectious hepatitis. On this admission, he was convalescent both from a recent exacerbation of hepatitis and a liver biopsy.

On admission, he was slightly icteric. His most recent liver function tests revealed a direct van den Bergh of 4.8; an indirect of 4.5, and bromsulfalein 28 per cent at the end of 40 minutes. Total proteins were 6.30 with an albumin-globulin ratio of 4.20:2.10. A physical examination revealed tenderness in the left lower quadrant just to the left of the midline, as well as marked tenderness and muscle spasm in the right lower quadrant in the area of McBurney's point. Rebound tenderness was present. No masses were palpated. Admission temperature was 101 F. and the leukocyte count was 14,700. In view of the evidence of severe recurring hepatitis, conservative therapy was advocated. He was placed on an oral dosage of 500 mgs. of aureomycin every 4 hours, with re-examination of the abdomen every hour. After 12 hours, the temperature had dropped to 99.8 F., and the leukocyte count to 10,900, and in 24 hours, the temperature was 98.0 F. with a leukocyte count of 8,850. Simultaneously, there was a dramatic amelioration of signs and symptoms in the abdomen.

Thirty-six hours after admission, the blood count was 7,650 with normal temperature. He was discharged from the hospital on the fourth day after admission. The total dosage of aureomycin was 8 grams, which was not supplemented with other antibiotics or chemotherapeutic agents.

Comment. This case suggests that aureomycin, in the presence of hepatitis, is not contra-indicated.

Follow-up. This patient was re-admitted to the hospital on August 9, 1949, at which time a small tender mass about 4 cm. in diameter could be palpated in the lower abdomen, left of the midline. Except for this tender mass, he had remained completely asymptomatic since his previous admission.

Exploratory laparotomy on August 11, 1949 revealed a diverticulitis of the sigmoid portion of the colon. The sigmoid which was adherent to the parietal peritoneum near the midline, was displaced to the right. The entire lower abdominal wall was infiltrated with a calcifying type of reaction.

The sigmoid was freed from the parietal peritoneum, and sections were taken of the inflamed tissue about the diverticulum. In addition, several sections were obtained from the anterior abdominal wall. Subsequently, all sections were reported as chronic inflammatory. Pathologic studies of the appendix, which was removed, showed a "peri-appendicitis".

No free pus was encountered and no other areas of inflammatory reaction were noted.

In retrospect, it is believed that this patient had an acute suppurative diverticulitis of the sigmoid, with a diffuse peritoneal reaction, and a direct extension of the inflammatory process into the anterior abdominal wall. Surgical interference on his original admission could conceivably have been without benefit. The effectiveness of aureomycin in aiding the conversion of this case to an elective procedure is believed to have been of inestimable value.

Since exploratory laparotomy, this patient has been asymptomatic and no masses are palpable.

M. W., No. 43960. White female, aged 56, admitted to the University Hospital on January 15, 1949 with a history of pain in the lower abdomen of 2 days duration, which had become excruciating in character 6 hours prior to admission. The pain, which was cramp-like in character, radiated from the right lower quadrant into the left lower quadrant. There was no history of constipation or vomiting.

The admission temperature was 100.8 F. and the leukocyte count was 24,300. A urinalysis was negative. There was extreme tenderness and rigidity in both lower quadrants. A bimanual examination was negative for tenderness in the right pelvic region.

A diagnosis of peritonitis, probably secondary to an acute appendix was made. An exploratory laparotomy was advised but was refused by the patient.

She was given 300,000 units of penicillin immediately after admission, and again twelve hours later.

Twenty-four hours after admission, her temperature was 101° F., and abdominal rigidity was more intense in the right lower quadrant. She persisted in refusing operation. Penicillin was discontinued and she was given one gram of aureomycin orally. This was followed by 500 mgs. of aureomycin orally every 4 hours. Approximately 14 hours later, her temperature was 99.5 F. and the leukocyte count was 17,000. She was subjectively improved, and abdominal tenderness had diminished.

Thirty-six hours after starting aureomycin therapy, a mass could be palpated in the right lower quadrant about 10 cm in diameter. On the third day of therapy, she was afebrile and asymptomatic. Abdominal tenderness had diminished and the mass had become smaller. A leukocyte count was 11,000. She was discharged 2 days later, comparative free of symptoms.

Comment. The evidence supported a diagnosis of a spreading peritonitis in this case, for which laparotomy was indicated and advised. Following the patient's refusal of operation and lack of response to penicillin, she was placed on aureomycin. It is possible that she was not given an adequate trial with penicillin. Crile (6) has shown that response to it in peritonitis takes 3 to 4 days. Altemeier (7) suggests that a penicillinase is formed by certain organisms including Escherichia coli. He states that this product has the property of destroying the activity of penicillin, therefore, large doses are needed in the presence of such organisms. Ochsner and Johnston (8) have estimated that in cases of appendiceal peritonitis treated conservatively, three-fourths will subside spontaneously without going into abscess formation.

SENSITIVITY IN VITRO

Chloromycetin and aureomycin both cover such a wide range of antibiosis that all of the organisms usually cultured from cases of peritonitis are sensitive thereto with few exceptions. In general, the Gram negative rods of the colon group are quite sensitive to both antibiotics. The only exceptions thus far encountered are the proteus and Salmonella groups. These are relatively insensitive to aureomycin, but are quite sensitive to chloromycetin. The same sensitivity relationship to the two drugs is noted also in infections caused by *Pseudomonas aeruginosa* (pyocyaneus) and *Clostridia**.

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* Various reports of sensitivity determinations indicate that the clostridia group is sensitive to both chloromycetin and aureomycin. Reports of effective treatment of pure clostridia infections with aureomycin and chloromycetin have been made.

Sensitivity determinations for chloromycetin against the usual bacteria found in a mixed type of peritonitis, were made by the turbidometric method, with the use of a spectro-photometer. The gamma factor expresses the amount of chloromycetin that will give 50 per cent inhibition of growth.

As a result of its instability in solution, sensitivity determination for aureomycin is a gross test. The method used, required incubation of bacterial cultures with varying concentrations of the drug, with expression of its inhibiting factor in gamma.

Woodward (14, 15), in treating acute infectious diseases, has reported serum levels for chloromycetin of over 40 gamma per cubic centimeter within the first 24 hours of therapy, and thereafter leveling off to a maintenance of 15 to 20 gamma per cubic centimeter. He suggests an initial dose of 3 grams of chloromycetin, followed by $\frac{1}{2}$ gram every 4 to 6 hours. As stated previously, chloromycetin was not used in the clinical phase of this report. It is believed that additional experimental data should be gathered before extending its use to the treatment of human peritonitis.

The dosage level of aureomycin in the clinical phase of this study, consisted of 500 mgs. every 4 hours until the temperature became normal, followed by 250 mgs. every 4 hours for several more days. The route of administration was oral, unless contra-indicated. If vomiting was persistent, aureomycin was injected intramuscularly. Although intravenous aureomycin is available, none was used in this study.

DISCUSSION

Chloromycetin and aureomycin were selected for this study because their antibiotic spectrums suggest their possible effectiveness in mixed peritonitis. The bacterial flora responsible for secondary or fecal peritonitis is a symbiosis of aerobic and anaerobic Gram positive and Gram negative organisms. The sulfonamides, penicillin and streptomycin are each effective against only specific elements of such a flora of organisms. Their activity may be inhibited by certain of the organisms present, such as when the effectiveness of penicillin against Gram positive bacteria is diminished by penicillinase, a product of Gram negative bacilli. Streptomycin which is effective against Gram negative organisms, seems to enhance the efficacy of penicillin in the treatment of peritonitis.

Experimental and clinical results obtained suggest that aureomycin has a protective action in peritonitis of appendiceal origin that presents certain advantages over penicillin alone, or when combined with streptomycin. Its ease of administration simplifies the problem of nursing care. If used in conjunction with penicillin, smaller doses of the latter can probably be utilized safely.

SUMMARY AND CONCLUSIONS

1. Experimental peritonitis has been produced in a series of dogs in an attempt to compare the protective significance of aureomycin and chloromycetin.
2. The clinical applicability of aureomycin in the treatment of a spreading mixed type of peritonitis is reviewed, and a series of cases reported.

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XANTHOCHROMIA OF THE CEREBROSPINAL FLUID

I. An Accurate Method for Quantitative Determination*†‡

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For many years there has been need for an accurate and yet simple method for determining the presence of xanthochromia of the cerebrospinal fluid. The two-tube visual comparison to water method is only moderately accurate and depends upon the visual color acuity of the examiner and the use of a panchromatic light source. The icteric index method, as used by Glaser (1), is inadequate at low levels of pigmentation and does not give sharp quantitative determinations.

Before undertaking an extensive study of the pigmentary changes of cerebrospinal fluid, an accurate and quantitative method was considered necessary.

PROCEDURE

Five cc of fresh cerebrospinal fluid are centrifuged for 5 minutes at 2500 revolutions per minute. The Klett-Summerson photoelectric colorimeter using tube 801 or 802 and the No. 42 blue filter (400 to 465 millimicrons) is adjusted so that with distilled water the scale is set to zero. Using the same tube, the reading of the centrifuged sample of cerebrospinal fluid is determined. This reading may be called the *xanthochromic index*. The sample may then be used for biochemical studies.

If 5 cc of cerebrospinal fluid are not available, the sample may be quantitatively diluted with distilled water and the xanthochromic index determined by the use of a dilution curve, since it has been shown that serial dilutions of colored cerebrospinal fluid follow Beer's Law (Figure 1).

DISCUSSION OF METHOD

The Klett-Summerson photoelectric colorimeter was selected for this procedure because of its expanded scale, its use of the optical density rather than the per cent transmission, and the small range of inaccuracy in the low end of the scale as compared to other instruments of this type. The xanthochromic index as described, can be determined using this instrument only.

The color of xanthochromic cerebrospinal fluid is caused by the presence of one of several different pigments. Some of these compounds have absorption maxima in the range of the No. 42 blue filter (400 to 465 millimicrons) and others have no absorption maxima in the visible spectrum (2). But according to the fundamental concepts of color and colorimetry a yellow fluid will cause the greatest deflection when a blue (complimentary color) filter is used in the colorimeter.

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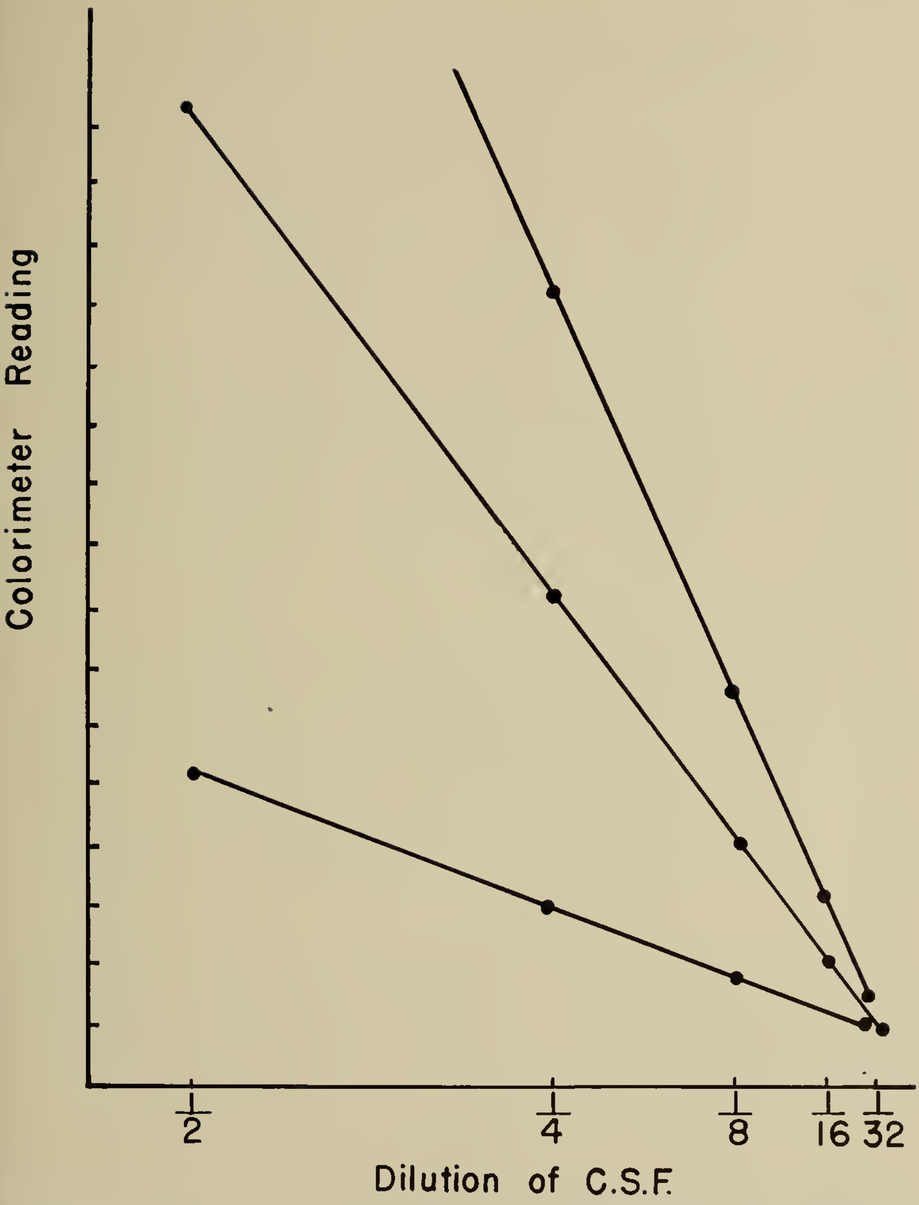

FIG. 1. Serial dilutions of three different samples of xanthochromic cerebrospinal fluid plotted against the colorimeter readings show that the Xanthochromic Index may be determined by quantitative dilution of small samples.

The use of a colorless standard in colorimetry is unorthodox. It was felt to be a satisfactory procedure however, since this method was designed to determine the presence of color in a normally colorless solution. According to the manufacturer of this instrument, the readings of any two colorimeters will be within five per cent of each other. To prove whether this would be true using a colorless standard, six different xanthochromic cerebrospinal fluids were checked by the above method in four different instruments of varied age and usage.

SAMPLE NO.	COLORIMETERS			
	A	B	C	D
1	13	13	12.5	13.5
2	15	15	14.5	15.5
3	19	19.5	18	18
4	8	8	7	7.5
5	41	40	41	41.5
6	19	19	18	18

There are three possible sources of error in this procedure. If the cerebrospinal fluid is allowed to stand too long before the removal of the cellular constituents, the color of the fluid may become contaminated by the hemolysis of any erythrocytes which are present. If the fluid is more than several hours old flocculation of the protein may occur and this opacity cannot be removed. Finally, it is necessary that the instrument be set at zero and the xanthochromic index be determined using the same colorimeter tube, although it is not necessary that the same tube be used in every determination.

INTERPRETATION

By this method, fresh, normal cerebrospinal fluid has an index of the order of four to six. All fresh, uncontaminated cerebrospinal fluids with indices above this level may be considered abnormal. Those having an index above thirty are rather obvious to the untrained observer; those with an index above fifteen will be noted to be pigmented by the experienced observer under ideal conditions; but those with a index below fifteen have probably not been noted previously, except in those instances where rather large quantities of cerebrospinal fluid were available for examination.

This method has been used for the past year by the Department of Neurologic Surgery as a means of detecting the presence of xanthochromia and as a means of accurately following the course of a disease process showing xanthochromia. For example, the xanthochromic index will show the rate of absorption of pigment and the occurrence of re-bleeding in a case of subarachnoid hemorrhage. The results of these observations will appear at a future date.

SUMMARY

1. A simple and yet accurate method method of quantitatively measuring the xanthochromia of cerebrospinal fluid is described.
2. The sources of error and the accuracy of the method are discussed.
3. The possibilities of the clinical application of this method are suggested.
4. The term *xanthochromic index* is suggested for this procedure. The normal value is four to six.

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A CONGENITAL ANOMALY OF THE FEMALE URETHRA*

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The problem of anomalous development of the genitourinary system in women has always been of interest to the embryologist and the gynecologist. The presence of these abnormal structures may represent a single variation but not infrequently are indicative of multiple congenital anomalies. Urethral diverticula, urethra duplex, hypospadias, agenesia of the urinary bladder and urethra epispadias have all been reported. The following case report is unique in that a comparable case has never been reported before. Those anomalies which appear in the external genitalia are easily recognized, not only by the physician, but often by the patient herself. When one reviews the embryologic development of the external genitalia in women and understands the complexity of its formation, one is impressed with the low incidence of these abnormalities.

CASE REPORT

I. M., (University Hospital, Disp. # AD 1961) was a 32-year-old colored para 2-0-1-2, seen in the Female Urology Clinic with the chief complaint of "trouble with passing water" of one day's duration. Family and past histories were non-contributory. There were no previous operations, serious illness or hospitalizations. Review of her systems was negative. There had never been any urinary symptoms except an episode of "burning" on urination. This disappeared without treatment or medicine. The patient had been married 13 years and had two children, the oldest was 10 and the youngest 5 years of age. Her labors were all spontaneous and without difficulty. There was one spontaneous complete abortion of eight weeks' gestation, cause unknown.

An examination revealed a slender colored woman who looked her stated age of 32 years. The skin and mucous membranes were negative. There was no lymphadenopathy. Her breasts were normal. An examination of the abdomen was negative. The liver, spleen and kidneys were not palpable. There were no areas of rigidity or spasm. The external genitalia were normal. The vaginal outlet was parous. There was fair support. No cystocele, urethrocele, or rectocele were present. Skene's or Bartholin's glands were not palpable. The cervix was small and firm, pointing in the mid-axis of the vagina. A speculum examination of the cervix was negative. The uterine fundus was normal in size, shape and position. The adnexae were negative and a rectal examination was negative. An examination of the external urethral meatus was *remarkable* in that it was suspended in its normal position by several fascial slings from the vagina. Except for these attachments, it was completely divorced from the urethral canal. Two narrow fibrous bands suspended the external urethra superiorly and one thick similar band suspended it inferiorly. (Fig. 1.) The lumen of the meatus would barely admit a #4 Hegar dilator; however, the urethral canal itself was identified. It was in normal position and was easily dilated up to the size of a dilator #7 Hegar. Further examination for other congenital anomalies was negative. This included intravenous pyelograms, cystoscopy, cytogram, upper gastro-intestinal roentgenograms, barium enema, with fluoroscopy hysterosalpingogram and a roentgen examination of the chest. The patient had been under observation for about seven months. Occasional dilatation of urethra had been done up to a #8 size Hegar dilator. The patient was entirely asymptomatic.

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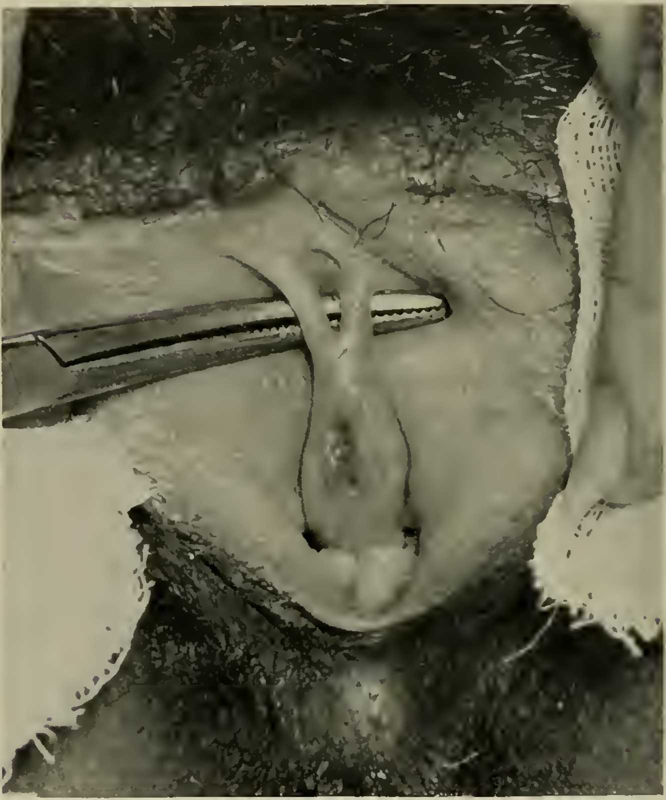

FIG. 1. Photograph of vulva showing anomalous urethra as described in text.

EMBRYOLOGY

The embryologic development of the normal female external genitalia is summarized as follows: During the fourth of fifth week of embryonic life, there appears in the midline a small protuberance known as the genital eminence which soon becomes more pronounced and is known as the genital tubercle. This indifferent structure of the human embryo, depending on the ultimate sex of the individual, is destined to become the penis or clitoris. Beneath the caudal surface of this primary genital tubercle is a pair of genital folds which extend dorsally to the region of the proctoduem. A longitudinal depression into which the urogenital sinus opens is located between these genital folds. Laterally, on either side, is a second pair of genital folds called the genital swellings which eventually form either the scrotal folds or the labia majora. If the embryo is destined to become female, the genital tubercle forms the clitoris and the genital folds become the labia majora. While a urethral groove is present for a short time in the base of the clitoris, this soon becomes rudimentary and the urethra in the adult female opens in the vestibule behind and beneath the clitoris.

During the last trimester of intra-uterine life, the vagina becomes increased in size while the urethra remains unchanged in length. The urogenital sinus distal to the vagina becomes more shallow and broader. It is this structure which forms the vestibule. The epithelium lining the vestibule arises from the ectoderm of the urogenital sinus.

COMMENT

This case represents a reduplication of the ectodermal plate, fenestrated to form two divergent bands, which extends from the anterior margin of the external urinary meatus and blends with the tissues of the labia minora. This structure was not unduly sensitive nor did it inconvenience the patient in her normal activity. The careful investigation of the remainder of the genitourinary systems failed to reveal any additional developmental abnormalities.

CONCLUSION

(1) The case presented describes in detail an abnormality of the female external genitalia.

(2) This represents a variation of the ordinary changes of the urogenital sinus and consists of complete separation of the external urethral meatus from the urethral canal, with the external urethra suspended in its normal position by several bands of tissue extending to the labia minora and vagina.

(3) A review of the literature fails to reveal any similar congenital anomaly.

ANTEPARTUM CEPHALIC MOLDING IN A RACHITIC PELVIS†*

D. FRANK KALTREIDER, M.D.

Since the advent of better nutrition in the formative years of childhood, the incidence of rachitic pelves seen during pregnancy is decreasing, but is still not uncommon. Unfortunately, prenatal roentgen examination of the fetus has only been frequent since 1930. For this reason the type of molding to be presented, which has probably occurred many times, has not been reported in the literature accompanied by roentgen confirmation. In Williams' *textbook of Obstetrics* (1) the following statement concerning molding before labor is made: "In exceptional cases the head may descend into the pelvic cavity comparatively early in pregnancy, and, as it cannot readily escape, it undergoes further development in that position, and in consequence presents characteristic deformities at birth, the part within the pelvis being markedly flattened." E. L. Cornell in Davis' *Gynecology* and *Obstetrics* (2) states: "By long continued pressure, the skull bones may be depressed where they come in contact with the promontory of the sacrum or pubis. In rare cases it may assume a kidney shape." The case presented below falls in the group of molding where the end result was one of kidney shape.

CASE REPORT

F. S., No. 46482, was a 29 year old white primigravida, whose last menstrual period was Feb. 16, 1948 and estimated date of confinement was Nov. 23, 1948. Her family history was non-contributory. She had an appendectomy at age 16. Otherwise her personal history was negative. Prenatally, on physical examination she was noted to be a short (4 feet, 10 inches) white female with short, bowed legs, and some lordosis. Her weight prior to pregnancy was 101 pounds. The only other significant finding was an easily palpable promontory of the sacrum, the diagonal conjugate measuring 9.5 cms. Her prenatal course was uneventful with a weight gain of 25 pounds and a normal blood pressure throughout.

Because of the short diagonal conjugate, a roentgen pelvimetry was obtained two weeks prior to her estimated date. The measurements were as follows:

INLET	cm.	MIDPLANE	cm.	OUTLET	cm.
Anteroposterior	7.7	Interspinous	?	Transverse Ischii	12.0
Transverse	12.3	Posterior Sagittal	3.0	Posterior Sagittal	5.6
				Anteriorposterior	9.6

The sacrum had an average curvature but was inclined backward. The sacrosciatic notch was acute, and lateral bore and sidewalls were divergent, and the sacrum showed evidence of rickets. The impression was a rachitic pelvis with a contracted inlet and outlet. The most dependent part of the fetal head was 2 cm. above the spines in a left occiput transverse position. It was kidney-shaped and appeared to be elongated, since the biparietal diameter was still above the inlet. There was a marked depression of the right parietal bone and a bulge of the left parietal bone. (Fig. 1.) There was evidence of suture separation on the anteroposterior plate. (Fig. 2.) The bitemporal diameter of the head appeared to be larger than the biparietal diameter, and neither was in the pelvis.

The patient was admitted to the hospital on Nov. 9, 1948 not in labor. The head was in a left

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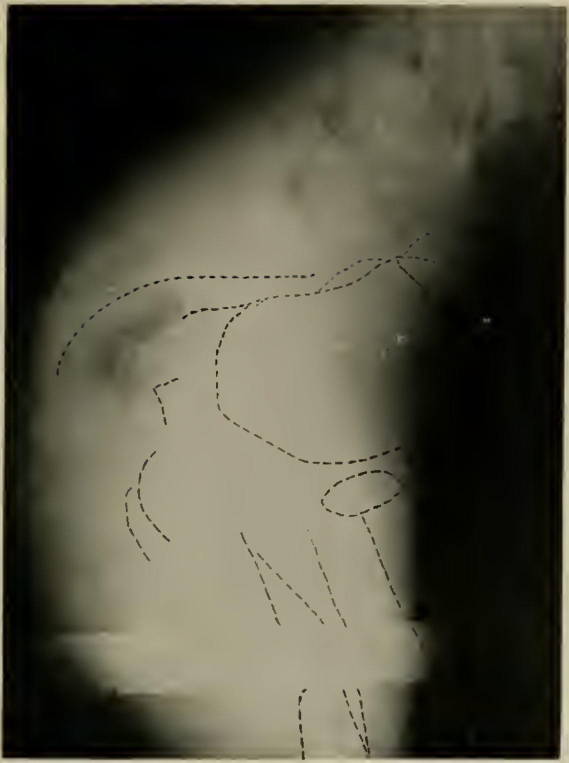

FIG. 1. Retouched roentgenogram of cephalo-pelvic relationships showing depression of right parietal bone.

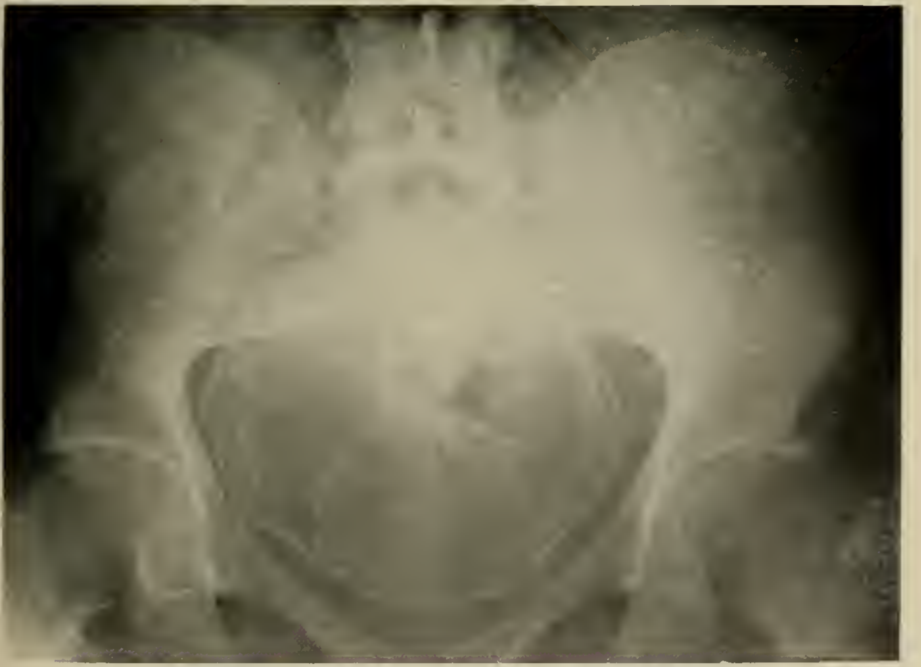

FIG. 2. Roentgenogram of fetal head in the pelvis. See text for description.

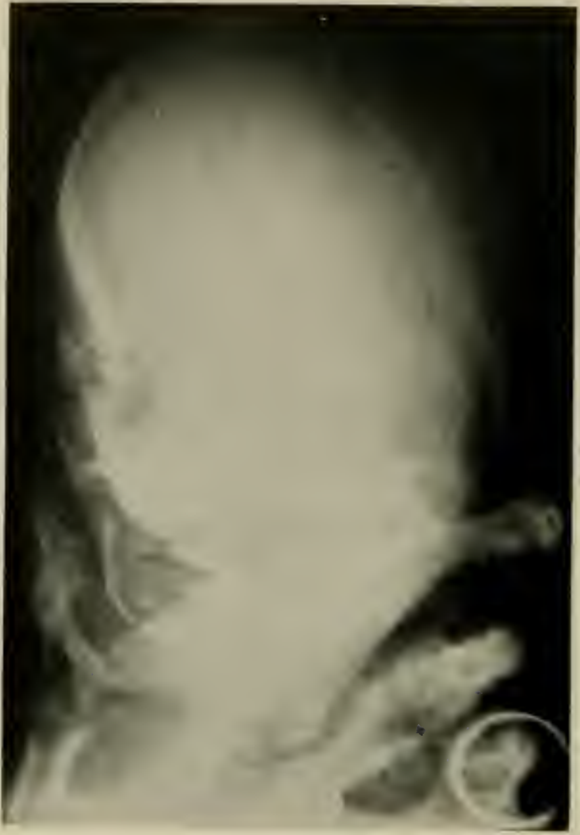

Fig. 3.

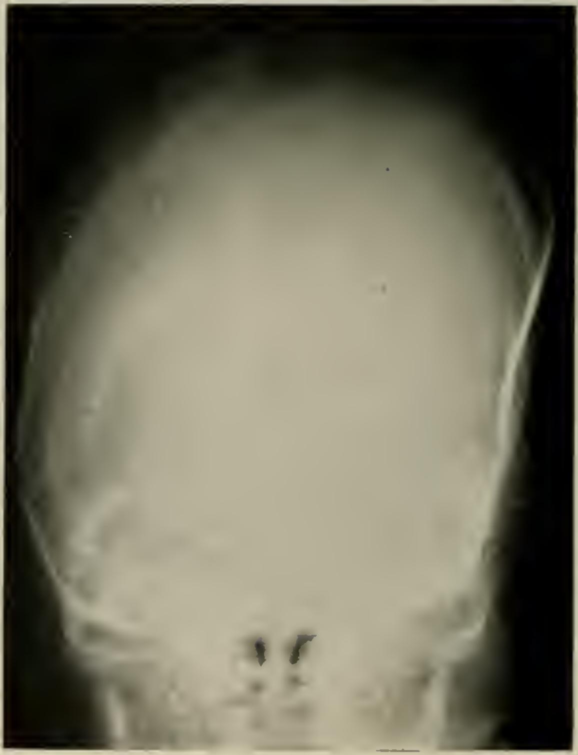

Fig. 4.

occiput transverse fixed in the pelvis. The height of the fundus was 28 centimeters. The fetal heart was heard in the left lower quadrant, and the estimated size of the baby was 3100 grams. Because the largest transverse diameter of the head was still not in the pelvis even though the head was fixed, and because of small measurements by roentgenography, elective cesarean section was advised.

Under cyclopropane anesthesia, the patient was delivered by laparotracheotomy of a 2835 gram living male child at 8:30 A.M. on Nov. 10, 1948. The head was easily lifted out of the pelvis. Both mother and baby were in good condition after the operative procedure.

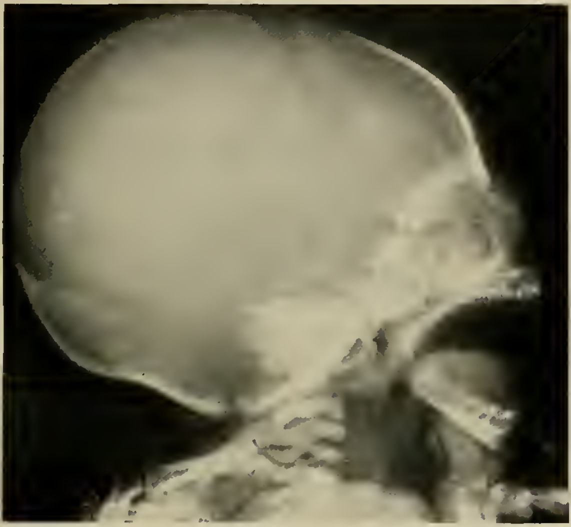

FIG. 5.

FIGS. 3, 4, 5. Roentgenograms of skull after birth showing distortion as described in text.

The head measurements of the baby were, bitemporal 7.8 cms., and the bi-parietal 7.1 cms. The accompanying photographs (Figs. 3 to 5) show roentgen visualization of the skull, emphasizing the kidney shape to the head. The baby and mother did well and were discharged without complications.

At the age of 5 months the child shows no evidence of molding. The parietal bosses appear to be equal and well rounded.

SUMMARY

A case of prenatal molding of the fetal head in a rachitic pelvis, detected by roentgen examination is presented.

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MUCOCELE OF THE APPENDIX

Review of the Literature with Report of Two Cases* †

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GEORGE A. STEWART, M.D.

Since acute appendicitis and its complications are so common, the less frequent affections of this organ are often overlooked. Among these is mucocele of the appendix. Very little, if any, information can be gained from standard textbooks or from Lewis' System of Surgery. Weaver (26) in 1937 reported 256 cases that were on record at that time and added 36 additional cases including 12 of his own. Castle (2) found 28 instances in 13,158 autopsies or an incidence of 0.2 per cent. Norment (21) found 36 cysts in 4,500 appendices, while Evans (7) found only 2 cases in 10,000 autopsies at the Los Angeles County Hospital. Doyle (5) reported 12 cases in 10,162 appendectomies occurring in all of the surgical service of the Southern California Medical School from 1925–1928. From 1929–1937 at the Cook County General Hospital (11) 9,180 autopsies were performed with an incidence of 2 cases or 0.043 per cent. During the same time 9,535 appendectomies were performed and 22 cases or an incidence of 0.23 per cent was noted. Mayo and Fauster (16) gave an incidence of 0.24 per cent in 31,200 cases of appendectomies done at the Mayo Clinic from 1917–1930. Of 8,457 operations on the appendix, Danreuther reports 8 cases or an incidence of 0.1 per cent (4).

The records of St. Agnes' Hospital show that from the years 1937 to July 31st, 1947, 5,815 appendectomies, and 435 necropsies produced histologic or gross diagnosis of 5 mucoceles or .08 per cent.

In commenting on the age incidence, Norment (21) in a report of 64 cases found that the average was 41 years. The youngest was 4 years old, while the oldest was 64 years. The ratio of males to females was found to be 2:1.

The terms mucocele of the appendix, hydrops of the appendix, mucoid appendix, residual appendix and retention cyst of the appendix are used interchangeably by some pathologists. Actually, however, they are not synonymous terms. Danreuther (4) states that a mucocele is a large tumor filled with a homogenous viscid material, and that a hydrops is filled with a fluid content. An empyema, on the other hand, is filled with pus. Waugh and Findley (25) believe that pathologically a hydrops is mere accumulation of fluid, while in a mucocele, the mucosa is hyperplastic and even papillary or adenomatous. Jerka and Scuderi (11) extend the definition to include similar cysts not only of the lumen of the appendix but also of its walls and mesentery.

The historical development of the mucocele since the original description by Rokitansky in 1842 has been well narrated by Ostrum and Miller (22).

Most of the statements advanced concerning the pathogenesis of mucocele have been more or less associated with very little corroborative data derived from experi-

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mental methods. Elbe (6) gives four prerequisites for the development of this condition:

1. Gradual obliteration of the lumen at one or more points.
2. Absence of gross infection.
3. Actively secreting mucosa or where there is less absorption than secretion.
4. Distention.

Obviously, there must be some form of obliteration of the appendiceal lumen, since without this accumulation of the contained products with distention could not occur. That this need be a permanent obliteration, however, is not at all a *sine qua non*. Vahaus (24) and Lifiendahl and Ries (14) each report a case in which the barium meal was able to pass into the cecum following emptying of the mucocele. Most of the cases reported, however, seem to show complete obliteration of the appendiceal lumen proximal to the cystic dilation.

Whatever the insult to which the appendix is subjected in order to produce a mucocele, the integrity of the blood supply seems to be of permanent importance. There are two sets of experiments which seem to bear out this view. Phemister (23) in 1915 was unable to reproduce this clinical entity on experiments when dogs were used. Most of his cases developed gangrene of the appendix. On the other hand, Naislund (19) working on rabbits tied off the appendiceal lumen without affecting the blood supply. He was more successful when newly born rabbits were used. The difference in experimental animals employed may be taken into account as a factor since the appendix of an herbivorous animal may have a different function from that of a carnivorous one. However, Naislund was clear in pointing out that following the severence of the appendix about 1 cm. from its base, the distal stump still had an intact blood supply.

The presence or absence of gross infection is likewise subject to some discussion. There is no reason to suppose that, given access to the cystic dilatation, bacterial elements from the cecum may not readily pass into the appendix. It has been suggested that the pseudomucin may have a bactericidal action (10, 12). This may be of some importance if bacteria fail to continue to enter the appendiceal lumen by its permanent obliteration but that pseudomucin can continue to destroy or inhibit bacterial growth with continued gross contamination seems to be somewhat far-fetched. In the intermittent type of cystic swelling, infection is probably dealt with by evacuation of the contents into the cecum, while in the permanent type of obstruction, whatever bacteria may have gained access into the appendiceal lumen could possibly be destroyed. If, however, this does not occur, empyema would be the result.

Mucocele of the appendix seems to be a chronic disease; hence, the specimens examined at necropsy or at operation necessarily show the end result of long continued intra-luminal pressure. Atrophy of the mucosa and remaining walls of the appendix are therefore most frequently described in pathologic reports. However, one must assume that this secreting surface must continue to function in order that cystic distention could occur. That this is such is shown by two cases studied by Waugh and Findley (25). In one case, the mucosa was hyperplastic and even showed papillary adenomatous changes, while another showed similar changes even before secretion was marked. Gutman (8) also reports similar hyperplasia in a case report. What factor or factors act to produce this mucosal change is not known. Waugh and Findley suggest that this may be a "precancerous" lesion and may in time become carcinoma. On the other hand, some type of infection may play a part. Mason and Hamerick report a case following drainage of an appendiceal abscess which was associated with pseudomyxoma peritonei (15). They state that an appendectomy in view of this complication should not be long delayed. Mere obstruction of the lumen plus an intact blood supply may be all that is necessary in some cases as shown by the experiments of Naislund (19). It may be that a small degree of increased intra-luminal pressure may in itself produce a hyperplastic response upon the mucosa in order that the latter may function against the increased pressure. This would continue until the pressure became so great as to cause pressure necrosis and atrophy of mucosa. In cases where rupture occurs before atrophy, the mucosa may continue to secrete. This may also be true of those cases described by Wahaus (24) and Lifiendahl and Ries (14) with intermittent obstruction of the appendiceal lumen. Most of the contents of the cyst is pseudomucin as determined by staining with mucicarmine (27). Whether this is secreted because of altered function of the mucosa or whether changes occur following secretion of mucin has not been determined. Perhaps long standing of mucin or activity by bacteria on this substance may be of some etiologic importance.

A small uncomplicated mucocele is associated with little or no symptoms. Some are found at autopsies (2.7) and one case was reported which was discovered during the course of a hernioplasty (27) that gave rise to no subjective symptoms. In some cases, the symptoms may resemble chronic appendiceal disease (5, 4, 16, 12). As the mass enlarges, however, symptoms caused by pressure on various adjacent organs may be found as well as a palpable mass. Pain may be present and occasionally may be referred to the pelvis in women and be associated with abnormalities of menstruation (5). Nausea, diarrhea, or constipation may be noted, while in some cases a localized swelling may occur. In one case reported by Ostrum and Miller (22) a calcified mass which was freely movable could be easily palpated.

When the mucocele is associated with a complicating factor, symptoms of the latter may predominate. A pure appendicitis of the proximal portion has been noted which, as would be expected, gave rise to symptoms of this condition (8, 13). Heatly reports one case in which an acute abdomen was simulated because of torsion of the proximal end of the appendix with hemorrhage into the mucocele (9).

Fistulae may occur as between the mucocele, the bladder, the rectum, the sigmoid and ileum with attendant symptoms of loss of weight, constipation, diarrhea and low-grade fever (22). Occasionally adenocarcinoma or carcinoid tumors may be found together with the mucocele (18, 25). Intussusception and partial obstruction occurred in two cases reported by Jones and Carmody (12) and in one case herein reported.

Pseudomyxoma peritonei is probably the most common complication of mucocele. When this occurs, the prognosis at once becomes guarded, since this acts similarly to that of the ovary (5, 12, 26, 15, 22). Occasionally, rupture may occur with extrusion of the contents of the mucocele, the perforation then becoming sealed over and the appendix again becoming cystic.

The diagnosis is extremely difficult and is usually made at the time of operation or at post-mortem examination. In a study of 80 cases, Mayo and Fauster (16) concluded that there was no definite diagnostic point. If there is a palpable mass in the right lower quadrant together with pain, mucocele must be definitely taken into consideration.

Miller and Ostrum (22) have considered the diagnosis from the roentgenologist's point of view. They state that rarely there may be present a free passage between the mucocele and the cecum. By fluoroscopic examination, pressure directed toward the rectum will produce a smooth filling defect of the cecum along its medial and inferior borders. Occasionally, the barium filled small intestine may be displaced sufficiently to describe an arc, indicating an intraperitoneal mass. In the male, the presence of a clean-cut, dense, intact annular shadow in the right lower quadrant, the wall of which is smooth and regular and which contains numerous, irregular, closely arranged plaques is strongly suggestive. In differentiation, teratoma and dermoid cysts frequently contain bones, cartilage, enamel of teeth or calcareous deposits.

Grossly, the size may vary from that of a normal appendix (10) to that of the size of a man's head (21). In Doyle's twelve cases, the largest was 12 cms. and the smallest 5 cms., while the width varies from 8 to 15 cms. (5). Occasionally, secondary cysts may be found also in the mesentery (11). Ostrum and Miller's case was 10 x 10 cms. The contents may be homogenous or be of the globoid body or "fish egg" variety (17, 3). This latter type comprises 0.35 per cent of the cases seen. The globoid body may be as large as 1 cm. x 0.9 cm. in length. They separate when placed in water and microscopically show a granular and fibrillar appearance. The center is similar, but is somewhat denser than the periphery of these bodies. The granular portion takes a basic stain, while the fibrillar is acidophilic in nature.

The treatment is surgical. The appendix must be removed with great care since spilling its contents will initiate pseudomyxoma peritonei. Occasionally, a portion of the cecum may have to be resected as in the case reported by Jones and Carmody (12) and in the cases reported here. Post-operative roentgen therapy is recommended by Weaver (26) if pseudomyxoma is present. Extension of a pseudomucinous cyst of the ovary may secondarily involve the appendix, so that the ovary should be examined routinely. Antoine (1) recommends removal of both ovaries if pseudomyxoma peritonei is present. If adenocarcinoma is associated (18), resection of the necessary portion of the gut is indicated.

The prognosis in uncomplicated mucocele is excellent. If, however, it is associated with any of the complications mentioned, the prognosis then is determined by the seriousness of the latter.

Out of the five cases of mucocele reported in this paper two have been selected to be presented because of their outstanding peculiarities. The first, was chosen because of its size, larger than most presented in previous literature, the second because of its intussusception with ileum and cecum into the ascending colon.

CASE REPORT #1

The second admission for this patient, a 70 year old white female, was on November 22, 1941. The previous admission was September 10, 1941 for hypertensive cardiovascular disease, and she was discharged improved following symptomatic treatment. On admission she presented a history of chronic constipation with sudden onset of abdominal pain and nausea and vomiting of 24 hours duration. The last bowel movement was twenty-four hours prior to admission. The abdominal pain increased with moderate distention. On admission the temperature was 101.8 (RO, pulse 115/min., respiration 30 and blood pressure 148 systolic over 100 diastolic. Positive findings revealed the heart markedly enlarged to the anterior axillary line. It was totally irregular in rate, force and rhythm. The abdomen was distended and tympanitic throughout. No organs or masses were palpable. There were no herniations. A rectal examination was negative. The WBC was 30,000. The urine was clear amber, with a specific gravity of 1.020, a 2+ sugar and occasional leucocyte per H.P.F. A diagnosis of intestinal obstruction was made and because of the short duration and the general condition of the patient she was prepared for immediate operation.

On opening the peritoneal cavity a considerable seropurulent fluid was found. Cultures were taken. On palpation of the cecum a large mass was felt in the pelvis which was delivered with ease. The mass consisted of the appendix which was approximately 16 cms. in length and 4 cms. in diameter at the base, in the shape of a Ram's horn. It was impossible to interpret where the appendix began and cecum ended. The wall of the appendix was thin and translucent, the wall of the cecum indurated. Apparently the base of the appendix and the cecum were obstructing the ileum, at the ileocecal valve. It was decided to remove the appendix and the involved portion of the cecum in the following manner. (a) The ileum was divided by cautery between clamps and the stump closed and inverted. (b) The cecum was divided by cautery between clamps and the stump closed. (c) A thumb lateral ileo-colic anastomosis was performed. Twelve grams of sulfanilamide were placed in the peritoneal cavity and the abdomen was closed in layers without drainage.

There was no bowel movement but the distention was relieved. The patient did not regain consciousness. The temperature rose to 104.5, pulse to 120/min. and the patient expired seventy-two hours post-operatively on November 25, 1941.

The specimen measured 16 x 4 cms. The contents were thick mucous which had coagulated in formalin. The walls were thin. The communication between the appendix and the cecum had been entirely obliterated and there was a diaphragm between the appendix and the cecum which had buttressed against the ileum at the ileocecal valve producing the obstruction.

CASE REPORT # 2

This 23 year old white male was admitted to the hospital on May 14, 1947 with complaint of abdominal pain of five days duration. Pain developed in the epigastric region, was gradual in onset and unaccompanied by nausea, vomiting or other gastro-intestinal symptoms. He did not seek medical aid until two days prior to admission. He was given an enema with no relief. Twenty-four hours prior to admission pain gravitated to the lower right quadrant accompanied by three bouts of vomiting. Bowel movements had been normal. There was no history of chills, fever, upper respiratory or genito-urinary complaints. On the day of admission the pain was constant in the lower right quadrant. The physical examination was not remarkable with the exception of abdominal findings. There were no herniae, masses or scars. The liver, spleen and kidneys were not palpable. There was marked tenderness in the right lower quadrant with moderate rigidity in the same area. Referred tenderness and rebound tenderness to the lower right quadrant were present. No costovertebral tenderness. The temperature was 99.6 (M), respiration 20/min. and pulse 100 on admission. Blood pressure was 132 systolic over 50 diastolic. The urine on admission was negative; complete blood count:—103% hgb., 4,950,000 RBC, 9,250 WBC—May 14, 1947. Urine on May 14, 1947—acid, specific gravity 1.026, albumen trace, sugar 0, RBC occ., WBC 3/h.p.f. A pre-operative diagnosis of acute appendicitis was made.

Following pre-operative medication of morphine and atrophine and under sodium pentothal and gas-oxygen and ether anesthesia a McBurney incision was made. On exploration of the abdomen the ileum was found to be dilated but the terminal ileum, appendix and cecum could not be found in the lower right quadrant. Exploration revealed a mass in the upper right quadrant. The McBurney incision was closed and an upper right rectus was made. The mass in the upper right quadrant was found to be an intussusception of the cecum, appendix and terminal ileum. This was reduced and the appendix removed along with a small portion of the cecum. Sulfanilamide was placed in the abdominal cavity. Routine closure was made.

Post operative diagnosis:—Intussusception with acute suppurative appendicitis.

The post operative course was uneventful and the patient was discharged on the 12th post operative day.

SUMMARY

The literature is reviewed on the mucocele of the appendix, an incidence of 0.118 per cent from 91,692 appendectomies and necropsies.

The differential nomenclature is defined.

The pathogenesis is discussed as well as the pathologic aspects, pointing out the factors which may make it a precancerous lesion.

The danger of draining an appendiceal abscess complicating a mucocele of the organ with ensuing pseudomyxoma peritonei is pointed out.

The diagnosis is discussed with attention drawn to the valve of roentgen visualization (flat plate) of the abdomen and barium enemata.

Two cases are presented; one of a giant mucocele of the appendix; the second of a mucocele which had intussuscepted into the colon, carrying the cecum and terminal ileum with it.

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CLINICO-PATHOLOGIC CONFERENCE

From the Case Histories, Baltimore City Hospitals, Baltimore

CLINICAL HISTORY

This 59 year old colored male former laborer, was admitted to the Medical Service on August 4, 1949, with the chief complaint of diarrhoea of three weeks' duration. The family history was non-contributory.

A past history revealed (1) needle treatments ten years before admission, and (2) an old healed fracture of the right leg, received as a young man. Correspondence with University Hospital, Baltimore, revealed the following facts.

In October, 1949, he was first seen in the University Hospital Out-patient Department, where he complained of swelling of the legs of 6 to 8 weeks, and shortness of breath of 3 to 4 weeks duration. There was no previous history of cardiac difficulty.

On examination, the blood pressure was 170 millimeters of mercury systolic over 90 diastolic. The neck veins were distended. Persistent basilar rales were heard. The heart was enlarged to the left, with a systolic murmur at the apex. Peripheral vessels were sclerotic. The liver was 4 fingers breadths below the costal margin. Ascites was present and there was 3 plus edema of the lower extremities. Roentgenographs of the chest at this time were negative. The patient was digitalized on an out-patient basis and followed in the Cardiac Clinic at regular intervals. There was slight improvement in the edema but the shortness of breath continued.

In December, 1947, he was admitted to the wards of the University Hospital, because of increasing shortness of breath. At this time, his blood pressure was 150 systolic over 84 diastolic. The other physical findings were unchanged. He responded adequately to the usual cardiac therapy, and was discharged one month later under digitalis therapy, with the diagnosis of (1) hypertensive arteriosclerotic cardio-vascular disease, and (2) late latent syphilis.

After discharge, he was again followed in the University Hospital Out-patient Department. A Roentgen examination of the thorax on May 21, 1948 was described as "moderate cardiac enlargement, predominantly left; infiltration in left lower lobe area of undetermined nature; bilateral apical pleural thickening and a questionable destructive progress involving the acromio-clavicular junction. Gout or metastatic neoplasm to be ruled out."

In June 1949, he fell, fracturing his right 7th rib. A Roentgenograph this time showed the fracture and a pulmonary infiltration which was then described as left hilar in origin. No further mention was made of the acromioclavicular lesion or of any other bony lesions, except the fracture of the 7th rib. He apparently recovered uneventfully from this disability and was well until three weeks before admission, when he experienced the onset of a watery diarrhea, accompanied by cramping lower abdominal pains. This was accompanied by anorexia and feverish feelings. Two days before admission, nausea and vomiting began. He had remained on a 0.2 mgm. dose of digitoxin per day prescribed at University Hospital until the onset of nausea and vomiting.

A physical examination revealed a temperature of 98 F., pulse 82, respirations 20, and blood pressure 136 systolic over 48 diastolic, bilaterally. He was a well developed, poorly nourished colored male, who appeared acutely and chronically ill. He was lying flat without respiratory distress and was well-oriented and cooperative. His skin was dehydrated with evidence of weight loss. The head was normal. The pupils were round and equal with sluggish (if any) reaction to light. Extra-ocular movements were normal. There were slight lenticular opacities. The fundi revealed the optic discs to be normal; arterioles narrowed. There were no hemorrhages or exudates. The ears, nose, tongue and pharynx were normal. The mucous membranes were of fair color, and the teeth were carious. The neck was supple, with no venous distention, thyroid enlargement, tracheal deviation or adenopathy. A chest examination revealed that the lungs were resonant to percussion and clear to auscultation, except for a questionably impaired percussion note in the 2nd left interspace, extending 4 to 5 cms. to the left of the sternum.

The heart was enlarged to the left to percussion, with the upper left border doubtful because of the dullness mentioned above. These sounds were well heard. The rhythm was regular. A systolic murmur was heard at both the apex and base and along the left sternal border. There was an early, blowing diastolic murmur, probably best heard at the apex, and poorly heard in the aortic area. The peripheral vessels were thickened. There was a Corrigan type pulsation. An examination of the abdomen revealed the liver to be 2 to 4 fingers' breadths below the costal margin. There was slight abdominal distension. No other organs or masses were felt. There was no free fluid in the chest. The genitalia was that of a normal male. A rectal examination revealed a small prostate gland. Liquid brown feces with some bright red blood was found on the examining finger. Examination of the extremities revealed no clubbing or edema. There were a few varicosities and an old traumatic arthritis of the right knee. The neurologic examination was negative.

Laboratory data on admission revealed 1 plus albumin in the urine, 25 to 50 red blood cells, and an occasional cast. Specific gravity was 1,003–1,015. On many subsequent examinations the urine was normal. The phenolsulfonphthaline test on two occasions showed 0 per cent in the first 15 minutes, and a 35 per cent total in 2 hours. Red blood cells numbered 3,390,000; the hemoglobin 11.5 grams; the hematocrit 35—(Indices normal). The sedimentation rate was 56/32 m.m. The white blood cells numbered 14,300, with a slight shift to the left. A serologic test for syphilis was positive with a titer of 6; a lumbar puncture was normal. An examination of the stool on admission and for 3 days thereafter was guaiac-positive. Repeated examinations thereafter were negative for blood. No ova or parasites were seen, and a culture showed no pathogens. Examination of the sputum was negative for acid fast bacteria, as were gastric washings. All agglutinations were negative. A tuberculin test was positive with #1 strength (PPD). Blood chemical examinations on admission revealed a non-protein nitrogen of 105 mgm. per cent. Sugar as 90; albumin-globulin ratio, 2.7/3.5; carbon dioxide combining power 43.7 vol. per cent. Chlorides 101 m.eq.; cephalin flocculation 2 plus; thymol turbidity 4.0; Vandenbergh direct 6; indirect 1.0; alkaline phosphatase as 3.0 units, and acid phosphatase as 0.8 units; calcium as 7.7 mgm. per cent. Phosphorus as 2.6.

A barium enema was normal. The radiologic examination of the gastrointestinal tract including a teleroentgenogram of the thorax showed a normal cardiac silhouette, with an ilfiltration extending from the left hilum into the first and second interspaces, with otherwise clear lung fields. Healing fractures of the anterior ends of the 4th, 5th and 6th right ribs were described. Subsequent roentgen examination showed a slight increase in size of the infiltration. On August 30, 1949 a radiolucent area at the fracture site in the 6th rib was described as a questionable osteolytic lesion. (Fig. 1).

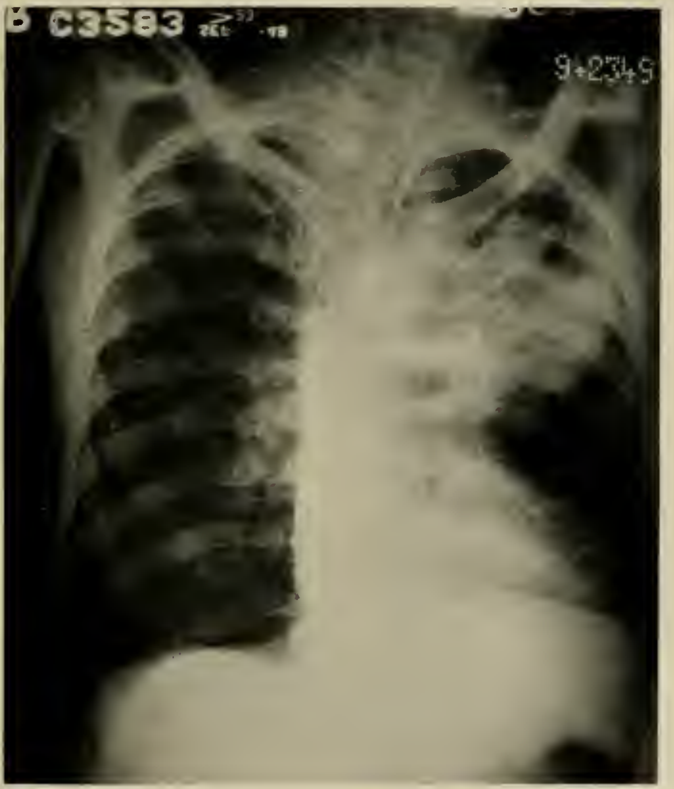

Fig. 1. Roentgenogram of chest

On admission an electrocardiogram revealed a complete heart block; left heart strain; myocardial disease and digitalis effect. Subsequently it revealed sinoauricular rhythm.

He was fed a soft diet, with subsequent abatement of the diarrhea. Fluids were forced orally, and some given parenterally. Slowly the blood non-protein nitrogen fell, and by the 12th hospital day had become normal. Digitalis was not given until the complete heart block reverted to a sinus rhythm following which the patient was maintained on $1\frac{1}{2}$ grains of powdered digitalis leaf daily.

During the first three weeks in the hospital he was afebrile. On the 4th hospital day bronchoscopy revealed probable narrowing of the orifice of the left middle bronchus apparently by some external pressure. Bronchoscopy on the 20th hospital day again showed no endobronchial lesion, and on this occasion failed to confirm the narrowing of the left middle bronchus.

Without any change in condition, he developed a fever, ranging between 100 and 102 degrees (F). This was unexplained, but was accompanied by a white blood count of 20,000, with a shift to the left. He did not respond to penicillin, and for the rest of his course he was never afebrile. With the onset of fever, lethargy became a prominent feature, and his non-protein nitrogen again rose. This responded well for the second time to parenteral fluids.

One month after admission, the radiolucent area in the rib was biopsied and was reported as osteomyelitis. The biopsy site never did heal properly, and despite compresses and penicillin, there was always some slight drainage from the area until his death.

Slowly his condition failed. His temperature varied widely despite penicillin therapy. Blood cultures were repeatedly sterile, and his blood hemoglobin showed a persistent but undramatic decrease, falling terminally to 8.0 grams. At no time did the pulmonary findings change. On the 62nd hospital day, he quietly expired.

CLINICAL DISCUSSION

Dr. Kenneth Boyd: It seems to me that it would be exceedingly difficult to explain the entire aspects of this patient on a single etiological basis. We might mention some of the things that we are positive about. We know that he did have and still has evidence of a syphilitic infection, with positive blood serology with a titer of 6. We can then go on to the cardio-vascular disease which he has, and postulate aortic insufficiency. We know he showed no striking enlargement of the heart from the standpoint of roentgenography and one would probably assume that his aortic insufficiency was on the basis of syphilis. We know he had a history of treatment ten years before, and this would not preclude aortic insufficiency.

You will note he has a high pulse pressure with a low diastolic pressure. It would appear as though his aortic insufficiency is again revealed here. At the time of his admission to the University Hospital, he was reported to have had hypertension of a rather significant degree (170 systolic over 90 diastolic), and at that time there was failure, but during his subsequent observation at the University Hospital, there was no striking failure reported. He was said to have shown both arteriolar and arterial changes. I think we can assume a hypertensive vascular factor in his cardiac disease.

There was nothing noted at the time of his admission to the University Hospital that would have been a factor in the hypertension at that time. With subsequent improvement, there was nothing to suggest that he had had renal involvement, such as glomerulonephritis, although one wonders about the striking edema he had at that time. The absence of hypertension later, mitigates against his having had pyelonephritis. If he had had a hypertensive disease during the subsequent period, he may have been too sick to maintain hypertension, but I think some record in the Outpatient Department would have shown some hypertensive levels. These are the factors which might be considered, as far as the cardio-vascular disease is concerned, but I think syphilis is the most striking factor that might play a part.

He obviously was uremic when he was admitted and I think the diarrhea and bloody stools are a part of the uremic status. I do not think the diarrhea and bloody stools indicate any disease, such as of the gastrointestinal tract, but were a part of the uremic aspects.

There is one other thing with reference to his syphilis. I think it is likely improbable that he was reported at the time he was at the University of Maryland to have a lesion involving the right acromioclavicular junction. He is reported here as having lesions involving the ribs. One might have thought of syphilis in that role in the form of gumma. If he had a gumma of his clavicular junction and no anti-luetic therapy, one would not expect the disappearance of this lesion. I doubt the patient's having had treatment for the lesions which are seen now. Fracture may have occurred on a spontaneous basis.

He was admitted without any striking evidence of heart failure. He was uremic, and one wonders how much of that was due to a vascular or renal change. It was probably purely vascular and one need not assume any other type of nephritic lesion entering the condition.

Because he had terminally, at least, a very striking febrile course, he may have had bacterial endocarditis, which was not detected. The diastolic murmur previously mentioned, I think, was likely present on his admission to the University Hospital. One thinks of the factor of endocarditis superimposed on a syphilitic endocarditis as a possibility. There are none of the common lesions of bacterial endocarditis present that I can see here except for the fact that he had progressive anemia and that he was febrile terminally, and that he did have some red blood cells in his urine. But these disappeared! The fact that no positive cultures were obtained does not rule out the possibility of superimposed endocarditis. Some individuals have had arteriosclerotic and sclerosing valvular changes, usually in a somewhat older age group than this. He could have had an endocarditis superimposed upon such a valvular lesion. On this basis he might not have had syphilitic involvement of the cusps, but with the terminal aspects of bacterial endocarditis superimposed upon arterioslcerosis.

I think it would be exceedingly difficult to accept the lesions involving the ribs which are suggested as being osteolytic. These were reported on biopsy as osteomyelitis. Osteomyelitis could occur, but if secondary to endocarditis, must have been an exceedingly unusual condition. These are things we should think of, which would have some value as to the cardio-vascular aspects of the situation.

Then we come to the pulmonary lesion. It is a striking feature, as shown by the roentgenograph. This is suggestive of having been present some time before the patient entered the hospital. One would think that there must be pulmonary disease of a chronic debilitating type. The duration of the lesion, the lack of fever at the time the patient was admitted to the hospital and the roentgenograph showing the atelectasis, would make one think of bronchogenic neoplasm. It is assumed that we had a bronchogenic neoplasm and that the lesions in the ribs were probably metastatic. We have no evidence of pulmonary metastatic lesions elsewhere, arising from primary growths, that could be demonstrated.

We have no support from the bronchoscopy, but there was some suggestion of extrinsic pressure, but a subsequent examination did not demonstrate this. I do not think this rules out the bronchogenic carcinoma. That would explain the patient's downhill course, aside from any cardiac factor that might enter the condition. So far as any other type of neoplastic disease is concerned, aside from pulmonary lesions, one thinks of lesions of the kidney region, renal or adrenal in origin. These might show pulmonary metastases. The patient did have red blood cells in the urine on admission. But as these cleared, it seems to me, if these cells had been caused by neoplastic disease arising in the kidneys, the red blood cells would be continuous.

The prostate also would have to be considered. This was disregarded as showing nothing. There are other sources of primary neoplasm: the gastrointestinal tract, the thyroid perhaps; but none of these showed any evidence of neoplastic disease. In addition, the lesions, so far as the chest was concerned, did not look like the type one would expect to be metastatic, but rather as a type of lesion of primary origin. Of course, if one has syphilis and has cardio-vascular disease, and something suggesting bronchial pressure, one always thinks of the possibilities of aneurysm. I do not think the roentgenograph appears to show involvement of the mediastinum. There is no suggestion of a vascular mass, so aneurysm does not fit the condition.

One would have to think of some infectious process that might involve the glands. Under these circumstances, tuberculosis is a possible source, or perhaps some form of fungus infection. However tubercle bacilli were not found either in the sputum or from gastric cultures, and no fungi were seen. I do not know whether the biopsy material was cultured for organisms, so we have no supportive evidence for tuberculosis.

We do not have positive evidence that there were bony lesions anywhere else, but when one sees lesions in the ribs with fractures, one thinks of multiple myeloma. Though we have no further supporting evidence, the pulmonary lesions and striking renal insufficiency could be part of a multiple myeloma. In this, infiltrative changes in the lungs can take place but other aspects cannot be reconciled as far as the pulmonary condition is concerned with multiple myeloma. Plasma proteins were not suggestive of myeloma.

Hodgkin's disease, with mediastinal involvement and perhaps some bone changes might be mentioned, but certainly this is relatively improbable.

Then, you come down to the collagenous group of diseases. One might perhaps think of collagenous disease, such as periarteritis nodosa rather than any other of the group to explain his hypertensive disease with heart failure, renal changes and similar conditions. The pulmonary lesion does not look like one associated with the group of collagenous diseases. One does not have the consistent progress one would expect to see. So the collagenous group would seem remote; and certainly a lesion of the aortic valve is not what one associates with this type of disease process. These are the things that come to mind as potential possibilities.

I would be inclined to feel, as mentioned primarily, that there is more than one disease process. There is probably syphilitic heart disease, with syphilitic aortic insufficiency. Then there is the possibility of superimposed bacterial endocarditis, which, I think, would be secondary and not the primary factor in the patient's death. He had an arteriolar and arteriosclerotic disease, and probably had hypertension in the past. He probably had the vascular type of nephritis. The pulmonary and skeletal disease was probably neoplastic. I would guess that the neoplasm was of bronchogenic origin.

Dr. Harold Rathbun: I saw this patient when he was here, and we felt there was no adequate way of explaining the whole thing, except as Dr. Boyd has given. We regarded the rib lesion as an osteolytic process, and saw only one lesion that we could identify as such, and that was the anterior in the 7th rib. We felt that the lesion was carcinoma, with metastases to the rib, and were very much surprised at the negative biopsy, even going so far as to question the surgeon to make sure he explored the proper rib.

I do not know of any culture having been taken at the time of the biopsy. We reached the same conclusion that Dr. Boyd has—namely; syphilitic heart disease, probably carcinoma, and the exact nature of the osteolytic lesions were obscure. We were confused as to that, and I did not know what to expect in the case of a fracture of the ribs with a subsequently developing endocarditis. Could an abscess develop at that site? We had not seen such a condition before. We had no reason for thinking he had endocardial bacterial disease. We thought he had renal disease and probably some nephrosclerotic changes in his kidneys as well.

Question: Was the possibility of the bloody stool being caused by uremia considered when the patient was first seen in the hospital?

Dr. Harold Rathbun: We were surprised that he improved so rapidly. Usually with a bloody diarrhea due to uremia the patient is in a rather terminal state. This is one of the last stages of uremia. This man responded very well to treatment.

Dr. Vickers: Clinically, we attributed the diarrhea to a combination of his uremia and digitalis intoxication.

Dr. Kenneth Boyd: The fact that he had no evidence of blood with his diarrhea is important. If he had had hemorrhoids, this would have been sufficient to produce some fresh blood in the stool. His somewhat low calcium is also probably a manifestation of renal disease, and perhaps diarrhea, or a combination of the two factors.

Dr. De Carlos: In the picture that I have we were not able to see where the biopsy was taken.

Dr. De Carlos: We have the date on the film as September 23rd but I cannot say where the biopsy came from.

Dr. Rathbun: He had allegedly fallen and fractured his rib. The University of Maryland was called at the time of his diagnosis here, and they reported there was no fracture at that time. The fracture was posterior at the 7th rib. The posterior fracture of the University of Maryland was not found here, but an anterior fracture was seen.

Dr. De Carlos: The one we saw here was the anterior one, and not the posterior one, which was healed.

Dr. Rathbun: Is the posterior one the one in which there is a lucent area in the rib?

Dr. De Carlos: Yes.

PATHOLOGIC FINDINGS

Dr. C. Gardner Warner: If there are no further comments or questions about the clinical course, we will proceed with the anatomic findings. The body showed considerable wasting at autopsy, the estimated weight being about 100 lbs. It was not that of a particularly tall colored man, but was well developed, the only external findings being a large decubitous ulcer over the right greater trochanter, and a nonhealing surgical sinus over the right posterior thorax. He had probably been favoring one side.

On opening into the body cavities, the peritoneum was not significant, with no excess fluid, adhesions or abnormal masses; and with a normal distribution of the organs. The liver was not particularly large, being 4 finger breadths below the costal margin. In the left pleural cavity, there was a considerable organizing pleuritis over the left upper lobe, which was freed with not too much difficulty, but was fairly dense over the mid-thorax and over the left apex. In the lower part of the pleural cavity, 200 cc. of cloudy, blood-tinged fluid was found. The right pleural cavity was free of any excess fluid, with no evidence of an inflammatory process. The pericardium was only normally moist, with 5 to 10 cc. of fluid. The heart was somewhat enlarged, but not markedly so, the weight being 460 grams—slightly above the upper limits of normal. It was normal in shape and size. It had tortuous coronary vessels on the surface, but there was no roughening of the pericardium. There was no terminal chemical pericarditis. The left ventricle was about 2 cms. in thickness and of the type seen in moderate hypertension. As far as the aortic valve was concerned, there was no evidence of it being incompetent, unless there had been a dilatation of the ring. This valve measured 7.5 cms. and the cusps were relatively normal. There were, however, some calcific deposits back in the aortic ring, which were about one commissure. The aorta was not scarred and there was no evidence of lesions which could be recognized as being caused by syphilis. The coronary ostium of the right coronary vessel was encircled by an atheromatous plaque, but there were no syphilitic lesions in that location. The mitral valve, likewise, had a mild amount of calcific deposits around its ring, but was free of any gross lesions on the cusp portions proper. The chordae tendinae were delicate. Grossly, there was no evidence of a valvular lesion of any significance in either the aortic or mitral valve or on the right side of the heart. The right auricular chamber was somewhat dilated. It looked like a mildly hypertensive heart, with a considerable degree of arteriosclerotic disease. One would expect to find in the muscle a myocardial fibrosis.

The kidneys were not contracted and small, one weighed 240 grams and the other 180 grams. They were not especially granular, although the capsules stripped with difficulty. In the left kidney, there was a cystic lesion at the lower pole, which was not in communication with the pelvis or calyx. It resembled a congenital multi-loculated cyst, which measured 3 to 4 cms. in diameter and should have had no significance with regard to the functioning of the kidneys.

The left lung was increased in weight, because of a nodular infiltration and fibrosis over the upper portion of the lung. It was heavy and noncrepitant in its upper lobe, and poorly so in the lower portion of the lung.

As this left lung was opened, conspicuous difference could be seen between the upper half and the lower half of the upper lobe. This is an attempt to bisect the hilus, and this is the major bronchus. (Fig. 2). At the secondary division of the major bronchus into its upper and lower bronchi, there is a tumor mass, apparently completely obstructing the bronchus. It is not too extensive. The tumor, as seen grossly, does not seem to grow out peripherally to the zone beyond the mid region of the lung.

The total extent of this tumor is about 2½ to 3 cms. It does not grow along the peribronchial structures extensively, but seems to hug this bronchus to the left upper lobe; and there is a change in the tissue served by this bronchus in the form of atelectasis, bronchiectatic cavity formation, increased scarring, fibrosis and caseation. If you did not see this bronchial tumor, one would make a diagnosis of tuberculosis of this upper lobe, there being caseous lesions and multiple cavities.

On seeing this obstructive tumor, you are inclined to see why any inflammatory process might bring about a similar picture in the upper half of the lung. The lower lobe appears normal.

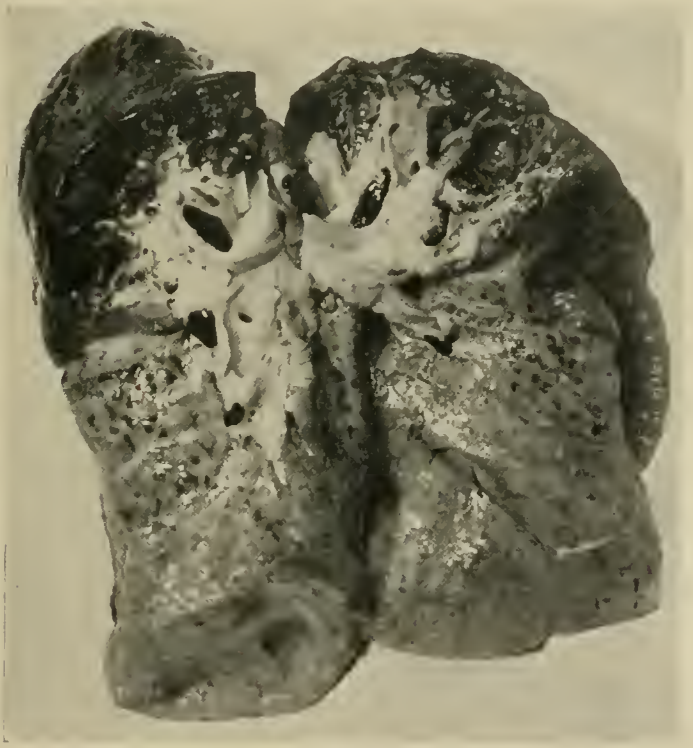

FIG. 2. Photograph of lung. For description, see text.

As far as the rib goes, we have the biopsy taken from the 7th rib. It showed a little callus formation, but no exudate or purulent material. Grossly, no malignancy was found in this specimen. We made a gross diagnosis of bronchogenic carcinoma, being primary in the bronchus to the left upper lobe, with obstruction, atelectasis, bronchiectasis, infection and pneumonitis in the left upper lobe of the lung.

We have no gross evidence of the dissemination of this tumor beyond this point, except for one dark bronchial node near the hilus of this lung, which resembles tumor. We could not confirm metastases to the ribs, nor were lesions found in any of the other organs.

The brain was removed, but no indications of any lesions were found, other than a moderately advanced sclerosis of the cerebral vessels.

Microscopically, the findings confirm a bronchogenic carcinoma of the squamous cell type. It is a typical epidermoid or acanthomatous pattern, imitating the variety that comes from the skin. It must have originated by metaplasia, following bronchial erosion. The tracheo-bronchial node, grossly suspicious of carcinoma, was the site of a caseous tuberculous lymphadenitis. The lesions in the obstructed left upper lobe were tuberculous.

The association of pulmonary tuberculosis and bronchogenic carcinoma of the squamous cell type is not uncommon. It is probable that the endobronchial lesions of tuberculosis certainly contribute toward metaplasia, and possibly even neoplasia. No microscopic lesions suggestive of syphilis were found. Arteriosclerotic changes were advanced in the coronary and renal vessels.

ANATOMIC DIAGNOSIS

Bronchogenic carcinoma, squamous cell type, left upper lobe bronchus; obstructive atelectasis, left upper lobe; fibrocaseous tuberculosis with tuberculous bronchiectasis, left upper lobe; caseous tuberculous adenitis, left hylus; generalized arteriosclerosis; coronary sclerosis; myocardial fibrosis; nephrosclerosis; emaciation.

BOOK REVIEWS

Illustration—Its Technique and Application to the Sciences. *Carl D. Clarke, Assoc. Professor of Art as Applied to Medicine and Director of the Department of Art, School of Medicine, University of Maryland, Baltimore, Md. Standard Arts Press, Butler, Md. 252 pp. Price $6.50.*

In this volume the author has endeavored to give a description of the methods and mediums used in producing illustrations for medicine and the medical sciences. The book is intended to be a reference on medical illustration. Therefore its scope is broad and embraces the history of medical drawing and painting, scientific drawing, materials for drawings, lettering, chemical drawing, pathologic specimen drawing and many other related subjects.

The historical background of medical drawing is especially commendable. Contemporary anatomic concepts as expressed by the medical drawings of the past centuries are presented for comparison. Short biographic sketches of outstanding medical illustrators are included in the historical section.

The chapter which deals with illustrations for surgery is worthy of special mention. The art student's conduct in the operating room is discussed. The various facets of the sketch which require emphasis and the exclusion of non-essential details is the burden of a large portion of this chapter. The chapter is abundantly illustrated.

Chapters on chemical drawing and lettering are applicable to most types of scientific illustration and would, of course, be a useful tool in physical or biologic illustration work. The reviewer is very favorably impressed by the explanation presented in the art of chart making. The making of charts to convey precise data and trends of a medical nature is discussed adequately by the author.

The style of the book is concise and clear. The author has presented the subject matter in the form of a running narrative whenever possible. The material assembled should compose a useful reference book for those requiring scientific and medical illustrative material.

John C. Krantz, Jr., Ph.D.

Applied Dietetics. *Frances Stern (Revised by Helen Rosenthal, B.S., Pearl C. Baker, B.S., and Wilma A. McVey, M.D.) Baltimore, Md. 1949. Williams & Wilkins Co. $5.00.*

This volume presents the dietetic principles used at the Frances Stern Food Clinic of the Boston University. It is quite inclusive in its material and presents data that can be of great value to a number of different groups working in the medical sciences.

The arrangement is sectional. In the first part there is discussed the construction of the normal and therapeutic diet. The basic principles are well explained and this section seems to meet the need of those students who wish to understand the steps used in the planning of a diet. This part will also be of particular value to the social worker who will find here discussed, the education of the patient in using the normal and therapeutic diet.

The remainder of the book comprises a series of tables used in diet construction, followed by sections of dietary outlines and typical diets and menus. There are many extremely informative tables and they are so constructed that their material stands out boldly. It is these sections which contain data which can be used to good advantage by the physician.

In summary, the reviewer found this to be an extremely practical volume on dietetics. The information it contains has applicability and it is surprising the amount and variety of data contained in this volume which is of moderate size. It is recommended without hesitation to dieticians, physicians and social workers.

Francis G. Dickey, M.D.

THE UNIVERSITY OF MARYLAND BIOLOGICAL SOCIETY

R. DALE SMITH, PH.D.
President

GEORGE P. HAGER, PH.D.
Secretary

The first meeting of the current academic year was held following a dinner on Wednesday, November 16th, 1949. Doctor C. Paul Silirie of the Medical Division, Merck and Company, delivered an interesting talk on "Cortisone—Its Chemistry and Physiological Activity".

The following officers were elected to serve for the current academic year: President, R. Dale Smith, Ph.D.; Secretary, George P. Hager, Ph.D.; Treasurer, Donald E. Shay, Ph.D.; Councilors, Frank H. J. Figge, Ph.D., William E. Hahn, Ph.D., Marie A. Andersch, Ph.D., and Vernon E. Krahl, Ph.D.

The following were elected to full membership in the Society:

Benjamin Allen, Ph.D.
Raymond M. Burgison, M.S.
Victor V. Brunst, D.Sc.
Frederick P. Ferguson, Ph.D.
Noel E. Foss, Ph.D.
E. J. Herbst, Ph.D.
Elsa Jahn, B.S.
F. M. Miller, Ph.D.
Edward Steers, Ph.D.
Guy P. Thompson, A.M.

The following were elected to associate membership in the Society:

Anu Amin, M.S.
Joseph Boggio, M.S.
Gustave Bourbeau, D.Sc.
Francis C. Brown, A.B.
Lee-Ming Chow, B.S.
Lawrence Edberg, B.S.
Robert Ellin, A.B.
Jacob Hanker, B.S.
John Harmon, B.S.
Cecil G. Hewes, M.S.
Sylvia Himmelfarb, A.B.
Junior Joseph, M.S.
Stanley Kramer, B.S.
Jeffie Langston, B.S.
Chi-Shan Ling, M.S.
Wei-Chin Liu, B.S.
John Magiros, B.S.
Karl Morgenstein, B.S.
Carl W. Mueller
Joseph Piala, B.S.
Charles I. Smith, B.S.
Kenneth Stahl, M.S.

MEDICAL SCHOOL SECTION

DR. JACOB E. FINESINGER NEW PROFESSOR OF PSYCHIATRY

Dr. Jacob E. Finesinger recently assumed active leadership in his new capacity as Professor of Psychiatry at the School of Medicine, coming from the Harvard Medical School where he has served as Assistant Professor of Psychiatry since 1936.

Dr. Finesinger was born in New Castle, Pennsylvania, and received his early education in the public schools of Oil City, Pennsylvania. He attended college and graduate school at the Johns Hopkins University where he received the degrees of B.A. (1923), M.A. in Zoology (1925) and M.D. (1929). He began his clinical training in 1929 as intern at the Boston City Hospital where he was subsequently Resident in Neurology and Junior Visiting Physician in Neurology (1930–1932). During this period he was associated in research and teaching with Professor Stanley Cobb as Assistant in Neuropathology at the Harvard Medical School. As Commonwealth Fellow at the Boston Psychopathic Hospital and as Fellow in Psychiatry at the

DR. JACOB E. FINESINGER

Harvard Medical School, he continued his training from 1932 to 1935 with Professor C. MacFie Campbell. During 1933 and 1935 he studied psychoanalysis and neuropathology in Vienna and worked in conditioned reflexes in Pavlov's laboratory in Leningrad. In 1935 he became Associate in Psychiatry at Harvard in the department of Dr. Stanley Cobb. Since 1938 he has served as Psychiatrist at the Massachusetts General Hospital.

During the war years Dr. Finesinger was engaged in research on the selection of aircraft pilots for the U. S. Navy and the National Research Council. He was Port Executive for the Port of Boston, U. S. War Shipping Administration, Consultant in Neuropsychiatry for the U. S. Public Health Service, and a member of the Medical Advisory Board, Selective Service System. He is a member of the American Society of Clinical Investigation, American Neurological Association, Boston Psychoanalytic Society, and other psychiatric organizations. At present he is Chairman of the Research Committee of the Group for Advancement of Psychiatry and President of the Boston Society of Psychiatry and Neurology. He is a member of the National Research Council representing the American Psychiatric Association. He is Consultant to the Massachusetts Eye and Ear Infirmary, Consultant in Neuropsychiatry, U. S. Army, Surgeon General's Office, and Consultant to the Department of Medicine and Surgery, U. S. Veterans Administration.

Dr. Finesinger has been active in several fields of investigation, and is the author of some seventy papers. These include studies on cerebral circulation, conditioned reflexes, autonomic nervous system, respiration, and endocrine studies in psychiatric disturbances. His clinical studies have been on the psychiatric factors in atopic dermatitis, in peptic ulcer, essential hypertension, and fatigue states. More recently he has been engaged in studies on cerebral metabolism and anoxia. His interest in the psychotherapeutic process has resulted in studies of procedures in psychotherapy. He has been particularly active in studying and developing methods and aids in teaching psychiatry to medical students and graduate physicians.

In the organization of his department there is included the new Psychiatric Hospital, plans for which are now complete and which will be constructed under his supervision and guidance. An intense research program which he had in progress at the Harvard Medical School has been transferred to new quarters in the Bressler Building.

DR. ANDREW G. SMITH APPOINTED TO FACULTY

A new position of Assistant Professor has been created in the Department of Bacteriology. This has been filled by the appointment of Dr. Andrew G. Smith who reported for duty on February 1, 1950.

Dr. Smith received his degree of Bachelor of Science in general bacteriology at Pennsylvania State College in June 1940. Immediately after graduation he worked briefly as a dairy bacteriologist at Delchester Farms Dairy, West Chester, Pennsylvania and then for a short time as a bacteriologist in a clinical laboratory in Upper Darby, Pennsylvania. His next position was in virus research at the Laboratory of Sharp and Dohme, Glenolden, Pennsylvania.

Upon the outbreak of the war, Dr. Smith enlisted in the U. S. Marine Corps and

DR. ANDREW G. SMITH

in December 1942 was commissioned as a second lieutenant. Thereafter he served with the Fourth Marine Division in the South Pacific.

Upon release from the service he entered the Graduate School of Arts and Sciences at the University of Pennsylvania and obtained a Master of Science degree in Bacteriology in June 1947. He has since completed his work for the degree of Doctor of Philosophy in the same school under Dr. Stuart Mudd.

Dr. Smith's interests have been in the fields of the bacteriophage and the normal cell structure of bacteria on which subjects he has published several papers.

DR. EDUARD UHLENHUTH HONORED ON 25TH ANNIVERSARY

Friends, Faculty and students honored Dr. Eduard Uhlenhuth, Professor of Anatomy, by a Testimonial Dinner on February 3rd, the twenty-fifth anniversary of his appointment as Professor of Anatomy at the School of Medicine.

Dr. John C. Krantz, Jr. was the master of ceremonies. Speakers included Dr. Maurice C. Pincoffs who paid a tribute to Dr. Uhlenhuth as a teacher and Dr. Frank Figge who summarized his investigative work which has amounted to over 100 original contributions.

Dr. Carl L. Davis, Emeritus Professor of Anatomy then spoke on "the Personality". Dean Emeritus James M. H. Rowland spoke on "Dr. Uhlenhuth the Man". Greetings from the Medical School were presented by Dr. Charles Reid Edwards, Acting Professor of Surgery.

Dr. Uhlenhuth was presented, as a testimonial, a bound copy of letters from many friends throughout the world and in addition a silver service, the gift of the Freshman class, Faculty and friends.

Over 200 guests were present for the dinner.

NEW LABORATORY CONSTRUCTION UNDER WAY

Contracts have recently been awarded for four additional research laboratories to be installed on the 6th floor of the Bressler Research Building, these laboratories to be available after July 1st.

Construction will shortly begin on laboratory facilities for the Department of Pathology, Division of Neuropathology. These laboratories are to be located on the 3rd floor of the Gray Laboratory Building.

ROTATING RESIDENCIES ANNOUNCED

The Department of Medicine in cooperation with other Baltimore Institutions has announced a revision in the rotating extramural Residencies in Medicine, effective July 1, 1950.

Physicians receiving training under the revised plan will serve 3 months at the Baltimore City Hospitals under the Tuberculosis Service, 3 months in Psychiatry at the Sheppard-Pratt Hospital, Towson, Maryland, 3 months in the University Hospital Out-patient Medical Department and the remainder of the year in the Department of Infectious Diseases at the School of Medicine.

ALPHA OMEGA ALPHA INSTALLED AT MEDICAL SCHOOL

At ceremonies following a dinner on December 9, 1949, the Beta Chapter, Alpha Omega Alpha honor Medical Society was installed at the University of Maryland. Alpha Omega Alpha, a National, non-secret honorary Medical Society was founded in 1902 by the late Dr. William W. Root at the University of Illinois.

The aims of Alpha Omega Alpha are the promotion of scholarship and research in the Medical School, the encouragement of a high standard and conduct among medical students and graduates and the recognition of high attainment in medical science of practice and related fields. With its motto "To be working to serve the suffering", the Society seeks to promote the highest ideals and to foster the scientific and philosophical features of the medical profession; to look beyond self to the welfare of the profession and of the public; to cultivate social mindedness; for foster research and in all ways to strive to enrich and enoble the profession of medicine and advance it in public opinion.

In consideration for election to membership of Faculty, Graduate and Student candidates, the Society seeks first a high and broad level of scholarship depending not alone on numerical grades but on the many tangible and intangible earmarks of a genuine scholar, leader or scientist in the field of medicine. Student candidates are selected from the third and fourth years on the basis of scholarship, studious attitude, promise of intellectual growth, professional attitude, appreciation of obligation, unselfishness and reliability. No single factor can be judged inclusive. Faculty and Graduate members are nominated on the same criteria.

In the constitution of the Society, Article 4, Sections 3 to 9, limits total number of Student members of any class to $\frac{1}{6}$ of the total number expected to graduate in that class, $\frac{1}{3}$ or less being elected in the third year and the remainder in the fourth year or thereafter.

At the installation dinner on December 9, 1949, Dr. H. C. Byrd, President of the University of Maryland, presided. The Charter for Beta Chapter was then conferred by Dr. Walter L. Bierring, National President of Alpha Omega Alpha and was accepted by Dr. H. Boyd Wylie, Dean of the University of Maryland School of Medicine. The Chapter installation was followed by the presentation of keys and certificates. The charge to the Chapter was read by Dr. Josiah J. Moore, National Secretary, Alpha Omega Alpha. Greetings to the new Chapter were presented by Dr. Alan M. Chesney, Dean of the Johns Hopkins Medical School. Dr. H. G. Weiskotten, Dean of the Syracuse University College of Medicine and Chairman of the Council of Medical Education and Hospitals, American Medical Association, spoke on "The Honor Fraternity in Medical Education".

The following became the Charter members of Beta Chapter, Alpha Omega Alpha.

Faculty Initiates

H. Boyd Wylie, M.D., Dean
John Edmund Bradley, M.D.
Thomas Nelson Carey, M.D.
Louis Harriman Douglass, M.D.
Harry Clay Hull, M.D.
Frederick Edwin Knowles, Jr., M.D.
Hugh Bernard McNally, M.D.
Arthur M. Shipley, M.D., D.Sc., Professor of Surgery, Emeritus
Samuel Thompson Redgrave Revell, Jr., M.D.
Milton Samuel Sacks, M.D.
John Edward Savage, M.D.
Henry Franz Ullrich, M.D.
Theodore Englar Woodward, M.D.
George Herschel Yeager, M.D.

Graduates

John Roland Hankins, M.D.
Fred Rodgers McCrumb, M.D.
Harry Patterson Mack, M.D.
Kyle Young Swisher, Jr., M.D.
Frank Joseph Theuerkauf, Jr., M.D.

Student Initiates

Harry Harlan Bleecker, Jr.
Louis Guy Chelton
John Armel Googins
Leonard Gerard Hamberry
Stanley Willard Henson, Jr.
Irvin Gorman Hoyt
David Morris Kipnis
Douglas Richards Packard
Frederic Rudolph Simmons, Jr.
Morton Smith
Albert Louie Upton
Robert James Venrose

Following the installation of the Chapter, officers for the following year were elected.

President:	Stanley Willard Henson, Jr.	Class of 1950
Vice President:	Robert James Venrose	Class of 1951
Secretary-Treasurer:	Milton Samuel Sacks	Class of 1934
Counselor:	John Edward Savage	Class of 1932

COOPERATIVE RESEARCH PROJECT ANNOUNCED

The Department of Medicine, Section on Infectious Diseases, has recently undertaken a cooperative research program relating to the therapy, epidemiological studies and the diagnosis of certain bacterial and virus diseases in cooperation with the School of Tropical Medicine, San Juan, Puerto Rico, the Antilles Medical Laboratory, U.S.A. and other Puerto Rican agencies.

This research will be under the direction of Dr. Theodore E. Woodward who directs the Section on Infectious Diseases.

DEPARTMENT OF ANATOMY

The Department of Anatomy announces the following appointments,
Dr. Pomeroy Nichols, Assistant in Neuroanatomy
Dr. H. Patterson Mack, Instructor in Anatomy
Miss Geraldine Wolfe, National Institute of Health Fellow

STAFF MEMBERS ATTEND AEC SCHOOL

Dr. Louis O. J. Manganiello, Resident in Neurological Surgery and Dr. Robert Bauer, Resident Physician, University Hospital, are currently enrolled at the Atomic Energy Commission School, Oak Ridge, Tennessee, where they are participating in a program relating to "Radioactive Isotopes".

OUTSIDE OBSTRETRIC SERVICE CEASES

Long an integral part of the University of Maryland medical curriculum, the outside obstetrical service will cease with the end of the academic year. In recent years the demand for such a service has become increasingly less and the benefits derived by the students have been noticeably reduced.

The abandonment of this service will result in the transfer of all cases formerly delivered on the outside to the obstetrical service of the University and Baltimore City Hospitals.

FELLOWSHIP ANNOUNCED

The Department of Obstetrics announces a Fellowship in Obstetrics under the auspices of the Baltimore Rh Laboratory. This Fellowship is a cooperative one between the Rh Laboratory and the Department of Obstetrics.

Applications should be referred to Dr. Louis H. Douglass, Professor of Obstetrics, University Hospital, Baltimore 1, Maryland.

MEDICAL LIBRARY NOTES

More than a year ago, the Medical Library requested, through the BULLETIN, that alumni, faculty, and other friends send to the library medical books and journals which might otherwise be discarded. It was indicated that from such gifts the library often gains missing numbers of periodicals not available from other sources; and likewise builds up duplicate sets of titles that are in constant use. All publications in excess of this library's needs are first offered, through Medical Library Exchange, to other medical libraries in the United States; and eventually to foreign libraries devastated by the war. Nothing is wasted.

The response to this request has been generous beyond all anticipation. Files of medical journals have arrived in overwhelming numbers. Besides the journals, there have been gifts of books, some given by alumni or by the families of deceased alumni; one or two collections left by bequest; and some new text-books presented by the authors or by physicians interested in a particular field.

The Medical Library acknowledges with warm thanks the books and journals received and appreciates the thoughtfulness which prompted these gifts. In future issues of the BULLETIN, names of current donors to the library will be listed.

B. M. C. AND P. & S. VOLUMES NEEDED

The library has incomplete sets of the yearbooks and catalogues of the Baltimore Medical College and of the College of Physicians and Surgeons. Since these schools are part of the University of Maryland, the Medical Library desires to build up complete files of their publications. Any gifts of these early volumes, or information as to possible sources of supply, will be appreciated.

The English weekly magazines given to the library by Dr. Frank W. Hachtel, Professor of Bacteriology have been well received.

CAN YOU SUPPLY THESE?

Missing numbers of journals urgently needed by the library:

- American Journal of Physiology, Vol. 155, No. 3, December 1948
- American Practitioner, Vol. 4, No. 1, September 1949
- American Medical Women's Association Journal, Vol. 3, No. 8, August 1948
- Archives of Pathology, Vol. 46, No. 5, November 1948
- Biochemical Journal, Vol. 41, No. 1, May 1947
- Journal of Biological Chemistry, Vol. 177, No. 2, February 1949 and Vol. 178, No. 1, March 1949

SEMINARS IN BIOLOGIC CHEMISTRY

The Department of Biological Chemistry has announced a series of seminars relating to problems in biological chemistry which will be held on Saturday mornings at 10:30 A.M. in the departmental library. The schedule for the remainder of the current semester is as follows:

April 15—Relation of Clinical Chemistry to Mental Diseases: Dr. R. M. N. Crosby.
April 29—The Mechanism of Urea Synthesis: Mr. J. Saunders.

May 6 —Recent Advances in Clinical Chemistry: Dr. Marie Andersch.
May 13—Studies in Liver Metabolism: Dr. Donald Fisher.

DEPARTMENT OF ROENTGENOLOGY

During the past year, two alumni and recent graduates have passed the examinations of the American Board of Radiology given at Atlantic City, N. J. in June 1949. The successful candidates were Drs. James J. Range and Edwin L. Seigman. Each has received his certificate and has become a Diplomate of the American Board of Radiology. Dr. Range is now associated with Drs. Hankins, Hankins and Scribner of Johnson City, Tenn. Dr. Seigman is associated with Dr. H. J. Pierce of Terre Haute, Indiana. His present address is 1000 S. 25th St.

Dr. Hugh D. Vazzana, who was also certified by the American Board of Radiology in September 1948, is now located at the Concord Hospital, Concord, N. H.

Dr. John DeCarlo, Jr. has been appointed Director of the Department of Radiology at the Baltimore City Hospitals, and Assistant Professor of Roentgenology of the University of Maryland. Dr. DeCarlo fills the position recently vacated by Dr. Stanley H. Macht, who is now Director of the Department of Radiology of the Washington County Hospital, Hagerstown, Md. Dr. DeCarlo is a graduate of the Jefferson Medical College and recently has completed a course of post-graduate training in Roentgenology at the Jefferson Medical College Hospital.

During the past few months a new 200 MA radiographic and fluoroscopic motor-driven tilting roentgenographic machine has been installed in the University Hospital. This machine is one of the most modern types, using many electronic circuits for control. Another addition, a new stainless-steel developing unit, has also been installed in the darkroom of the main roentgenologic department. This unit includes an electrical cooling unit which maintains the developing solutions at a constant temperature.

More new equipment is now at hand to remodel and modernize two other roentgen rooms in the main department. The old equipment will be moved to the Dispensary Department of Roentgenology which is now functioning efficiently.

A grant of $4680.00 has recently been made by the American Cancer Society for the remodelling of the 200KV deep therapy machine. When this has been accomplished, the machine will be up-to-date in all respects.

APPOINTED FEDERAL CONSULTANT

Dr. Milton S. Sacks has been recently named consultant to the Director of the Microbiological Institute, National Institutes of Health at Bethesda, Maryland.

Under this new appointment, Dr. Sacks will advise the Director on certain problems relating to the control of all products of biologic origin such as sera and antitoxins.

On January 18th, Dr. Sacks spoke at a meeting of the Frederick County Medical Society concerning "Recent Advances in Hematology". On February 1st, he was guest speaker at the Mid-Atlantic Post Graduate Urologic Seminar sponsored by the Maryland Urologic Association. His topic was "The Clinical Pathology of the Urinary Tract". On February 16th, Dr. Sacks spoke at a meeting of the Tri-County Medical Society at Elkins, West Virginia. His topic was "Recent Advances in Hematology".

ITEMS

The Atlantic Dermatology Conference met in Baltimore on Saturday, March 25, 1950. The Clinical Session was held in the Skin Clinic at the University Hospital. Dr. Harry M. Robinson, Jr. was Chairman of the Conference. He and Dr. Harry M. Robinson, Sr. were Co-chairmen of the Committee on Arrangements. About 300 dermatologists attended the all-day session.

At the Southeastern Surgical Congress Postgraduate Assembly held in Washington, D. C., March 6–9, 1950 Doctor Otto C. Brantigan of the school staff presented a paper entitled "Extrapleural Plombage Using Lucite Balls in the Treatment of Pulmonary Tuberculosis". Doctor George H. Yeager read a paper entitled "The Treatment of Mixed Peritonitis with Aureomycin". Dr. Albert E. Goldstein presented a paper entitled "Familial Urological Diseases".

Dr. J. Mason Hundley, Jr., Professor of Gynecology, was recently the guest of the Post Graduate Clinical Institute at Lansing, Michigan, where he spoke on "Radiation Therapy in Benign Uterine Bleeding".

On April 6, 1950, Dr. Hundley spoke at Parkersburg, West Virginia, on the subject, "Carcinoma of the Cervix".

In June, 1950, he will present a paper on "Bacteriological Studies in Salpingitis" at the meeting of the American Gynecological Society at White Sulphur Springs, West Virginia.

Drs. Maurice C. Pincoffs and George H. Yeager are now in the process of preparing a revision of the section on Diseases of the Mesentery and Peritoneum which will be published in the Oxford Loose Leaf Medical Series.

Recently named Consultants to the U. S. Army Pacific Theatre include Drs. E. T. Lisansky, Henry Ullrich and Harry C. Hull of the Medical School Staff.

Dr. George H. Yeager has been recently named Surgical Consultant to the U. S. Army in the European area which includes Germany and Austria. Dr. Yeager recently left for a short tour of duty in Europe.

Dr. Roy B. Turner, class of 1943 has been recently appointed to the Neurosurgical Staff and has been assigned as Fellow in Neuropathology.

Dr. Joseph W. Goldzieker, Chief of the Research Division and Endocrine Clinic of the St. Clare Hospital, New York City, recently addressed a meeting of the Obstetric House Staff.

The Department of Pediatrics recently presented two guest lecturers. On February 8, 1950, Dr. Karle Price spoke on "Habits in Action". On March 8, 1950, Dr. Miles E. Drake, Fellow in Biology at the University of Pennsylvania, spoke on "Infectious Hepatitis". Dr. Drake is a graduate of the University of Maryland, class of 1944.

Dr. John C. Krantz, Jr., Professor of Pharmacology was the Commencement Speaker at the graduation exercises of the University of Tennessee, held at Memphis, Tennessee on March 30, 1950.

Dr. Rowland, is shown at his desk in the Baltimore Life Insurance Co. offices where he now serves as Medical Advisor.

MEET THE EMERITI*

James M. H. Rowland

Retirement as Dean of the Faculty of the School of Medicine was only the beginning of a continued medical career for Dean Rowland.

In 1940 he became Medical Director and Secretary for the Baltimore Life Insurance Company and since 1948 has continued as advisor to the Medical Department of that Company.

At 83, Dean Rowland is alert, active and is vitally interested in the University, being present at most of the regular and special functions. He has continued an active membership in the Baltimore City Medical Society and serves as a member of the Board of Directors of the Maryland General Hospital.

Dean Rowland has many plans for the future including a gardening project and several vacation trips. After 60 years of active practice, we find Dean Rowland in the best of health.

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* *Ed. note: Among the Emeritus Professors no longer active on the Faculty of the School of Medicine, there are many who have continued either as active practitioners or who have maintained an increasing interest in their avocations or hobbies. The Bulletin will present from time to time, brief interviews with these gentlemen so that you may keep abreast of their activities.*

POST GRADUATE COMMITTEE SECTION

Howard M. Bubert, M.D., *Chairman and Director*

Sarah Cook, M.D.,
Assistant Director

Elizabeth Carroll,
Executive Secretary

Post Graduate Office: Room 600
29 South Greene Street
Baltimore 1, Maryland

NOTICE

The Post Graduate Committee of the University of Maryland School of Medicine has authorized the publication at regular intervals of a bulletin, the purpose of which is to keep the physicians of Maryland aware of the educational opportunities being offered them by this Medical School.

EDITORIAL

Why Post Graduate Courses?

Medical education, having passed through an egocentric infancy followed by an adolescence of specialism, has now emerged mature.

Maturity entails the realization that the responsibility of the School of Medicine to teach does not cease upon the graduation of the student, or upon the completion of hospital training, but covers the entire span of professional existence of not just a few, but all. It is no longer possible for the School of Medicine to remain aloof and interest itself in a few of the select. The school must instead continue to maintain a keen interest in the educational welfare of all members of the medical profession.

Post graduate courses designed to meet the needs of the practitioner, and presented so that he loses little time from his practice, are one of the first of the many endeavors that are to be made by the University of Maryland School of Medicine in the field of post graduate medicine.

To succeed, this program must have the cooperation and active participation of all physicians.

BASIC SCIENCE COURSES

Obstetrics and Gynecology

Last year, a post graduate basic science course in obstetrics and gynecology was offered by the University of Maryland School of Medicine. This course is again being offered during the Academic year 1949–50. The course began on October 4, 1949, and will run for twenty weeks. During this time, material in anatomy, physiology, pharmacology, pathology, biochemistry, and bacteriology will be offered related to these specialties.

The course is being given by the members of the Basic Science Departments and has been recognized for six months of credit toward Board certification in Obstetrics and Gynecology. Dr. D. C. Smith, Professor of Physiology, has assumed responsibility for correlating this work in the Basic Science Departments.

Surgical Anatomy

For the past three years, the Post Graduate Committee has given a post graduate course in Surgical Anatomy for the purpose of preparing candidates for the examination in anatomy by the American Board of Surgery. This course is being taught by Dr. Otto C. Brantigan, Professor of Surgical Anatomy and Professor of Clinical Surgery at the University of Maryland School of Medicine.

Anaesthesiology

Dr. Alfred T. Nelson, Assistant Professor of Anaesthesiology and Chairman of the Department, has arranged through the Post Graduate Committee, a series of lectures in physiology, biochemistry, and pharmacology for the Department of Anaesthesiology in the University Hospital. The purpose of these lectures is to review the members of the house staff of the Hospital in the basic sciences related to their subject and to integrate the information with this specialty. The lectures are to be offered once a week and to run for 48 lectures over a period of two years. The first lecture in the series, "The Conducting System of the Heart," was given by Dr. D. C. Smith, Professor of Physiology, in the Board Room of the University Hospital at 4:00 P. M. on October 18, 1949.

EXTRAMURAL COURSES

During the past two years, the Post Graduate Committee has arranged extramural courses for a number of groups of physicians in the State of Maryland, and attention is called to the message from the President of the Medical Alumni Association, which appears on page 106 of this issue of the Bulletin. Last year, lectures were presented to the following groups:

Prince George's County Medical Society at Cheverly, Maryland
Frederick County Medical Society at Frederick, Maryland
Wicomico County Medical Society at Salisbury, Maryland
Medical Care Physicians at University Hospital, Baltimore, Maryland

This year, a series of six lectures is being given to the members of the Washington County Medical Society at the Washington County Hospital in Hagerstown, Maryland, and to the members of the Wicomico County Medical Society at the Peninsula General Hospital in Salisbury, Maryland. The following lectures have been presented:

1. Newer concepts of Rheumatic Fever and Rheumatic Cardio-vascular disease, by Sidney Scherlis, M.D.
2. Heart Disease and Pregnancy, by C. Edward Leach, M.D.
3. Functional Heart Disease, by William S. Love, Jr., A.B., M.D.
4. Recent Advances in Hematology, by Milton S. Sacks, M.D.
5. Allergy in General Medical Practice, by Howard M. Bubert, M.D.
6. Diarrhea and Vomiting in Infancy, by Melchijah Spragins, B.S., M.D.
7. Respiratory Infections in Infancy and Children, by J. Edmund Bradley, M.D.

ARRANGING FOR POST GRADUATE COURSES

Each spring, the Post Graduate Committee writes to the Secretary of each of the Maryland County Medical Societies, asking if his group would be interested in sponsoring a series of lectures to begin the following fall. When interest is evidenced, the Societies are requested to state their preferences on the subjects to be presented, as well as the time and place where they are to be given.

A minimum of twenty-five men is required for each series of lectures. Small County groups may combine if necessary, in order to meet this minimum. The fee is $25.00. Plans are being made to supply copies of all the lectures to the participating physicians. Those interested in having such a course given in their vicinity, should write to the Post Graduate Committee immediately as there is still time to arrange for several of these courses.

RURAL HOSPITAL AFFILIATION

Resident programs in the rural hospitals have been one of the objectives of the Post Graduate Committee of the University of Maryland School of Medicine. These programs provide valuable training to the resident as well as stimulating the local group. At present, the Departments of Obstetrics, Pediatrics, and Surgery of the University Hospital have been sending residents to the Peninsula General Hospital at Salisbury, Maryland. Surgical residents from the City and Mercy Hospitals are rotating in experimental surgery at the University of Maryland School of Medicine. A resident training program in Orthopedic Surgery is being established by the Kernan Hospital in cooperation with the University and Baltimore City Hospitals.

Hospital personnel interested in exploring the possibilities of such an affiliation, should communicate with Dr. H. Boyd Wylie, Dean, University of Maryland School of Medicine, Lombard and Greene Streets, Baltimore 1, Maryland.

PARTIAL ROSTER OF POST GRADUATE STUDENTS

The following physicians from the combined Carroll and Howard County Medical Societies received post graduate instruction during the 1947–48 season:

S. Luther Bare, M.D., Westminster, Maryland
C. L. Billingslea, M.D., Westminster, Maryland
George E. Burgtorf, M.D., Ellicott City, Maryland
Wilbur H. Foard, M.D., Manchester, Maryland
J. Stanley Grabill, M.D., Mt. Airy, Maryland
Gertrude M. Gross, M.D., Springfield State Hospital, Sykesville, Maryland
Irene L. Hitchman, M.D., Springfield State Hospital, Sykesville, Maryland
Reuben Hoffman, M.D., Henryton, Maryland
William Carl Jennette, M.D., Westminster, Maryland
Thomas Henry Legg, M.D., Union Bridge, Maryland
James T. Marsh, M.D., Westminster, Maryland
M. N. Mastin, M.D., Sykesville, Maryland
Frank E. Shipley, M.D., Savage, Maryland
W. Glenn Speicher, M.D., Westminster, Maryland

L. C. Stitely, M.D., New Windsor, Maryland
W. C. Stone, M.D., Westminster, Maryland
Robert Hay Taylor, M.D., Springfield State Hospital, Sykesville, Maryland
Charles S. Whitaker, M.D., Clarksville, Maryland
Elizabeth Winiarz, M. D., Springfield State Hospital, Sykesville, Maryland
Witold Winiarz, M.D., Springfield State Hospital, Sykesville, Maryland
Lewis K. Woodward, Sr., M.D., Westminster, Maryland

ALUMNI ASSOCIATION SECTION

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Representatives, Editorial Board, Bulletin

Harry C. Hull, M.D.
Albert E. Goldstein, M.D.
Wm. H. Triplett, M.D. (ex-officio)

Alumni Council

Louis H. Douglass, M.D.
Lewis P. Gundry, M.D.

The names listed above are officers for the term beginning July 1, 1949 and ending June 30, 1950.

PRESIDENT'S LETTER

I have had an opportunity to discuss the postgraduate program sponsored by our Medical School with the Dean, the Chairman of the Committee charged with its management and development, and also some of the personnel of that Committee. I believe, I now have a fairly good understanding of its purposes as well as its possibilities and I wish that not only every member of our Association but every alumnus of our school could be brought up to date on the accomplishments and the promising outlook this program holds. There can be no argument against the basic and continued necessity for postgraduate medical education and the plan evolved by our own Medical School to meet the demand seems to me to merit the full support of our Association.

The first series of postgraduate seminars was begun in October, 1947 under the auspices of the Prince George's County Medical Society. The success of that venture seems proved by the fact that thirty-seven physicians participated in the pursuit of postgraduate studies. Since then the Committee has moved forward into other sections of the State with seminars and the response to its efforts has been promising indeed. It is interesting to note that a group from Howard and Carroll Counties found time and interest sufficient to warrant their traveling to the University Hospital in order to attend the monthly seminar meetings.

I am reliably informed that we have in the metropolitan district of Baltimore approximately one thousand alumni. Many of them are closely identified with teaching and are thus keeping abreast of progress in medicine. It cannot be denied that many not associated with the teaching effort need the type of instruction these seminars provide. Since our Association's chief claim to existence revolves around two basic principles: 1) the good we can do each other, and, 2) the good we can do our school, I believe we, as an Association, should make every reasonable effort to promote a seminar under our auspices for the benefit of our alumni in metropolitan Baltimore. Obviously the classes would not be limited to our own graduates but our chief interest would naturally be in them and to the end that they might have the opportunity seminars afford.

I solicit considered opinion from any who may be interested. Should a favorable response be sufficient to warrant serious consideration, I shall be only too glad to present the subject to our Board of Directors for its consideration and disposition. To me it seems timely to fully consider a plan which is so filled with promise to give to the citizens of our City and State improved medical care. The full support of the Postgraduate program is a challenge every alumnus must meet. Let's do it actively and reflect the credit our school deserves.

All Alumni are urged to make every possible effort to attend the Exercises incident to Graduation and take part in the ceremonies which will feature this year's celebration. A number of class reunions are being arranged and a large registration is anticipated. An interesting program of activities is well under way and will be in readiness when June 9th arrives.

William H. Triplett, M.D.,
President

SPECIAL NOTICE

To Our Alumni:

This is now your BULLETIN. You are a partner in its publication. This is the second issue published since the formation of the partnership. We believe you will find it to be increasingly interesting and useful and will want its production continued. Our editorial staff will make every effort to give you an improved journal with each issue.

We must point out however, that in order to do this and carry our share of the load, additional funds must come into our treasury.

At the 1947 Annual Meeting our membership authorized by vote that annual dues be increased to meet this demand.

Beginning July 1, 1950, dues will be $5.00 per year, $2.00 of which will be used to defray the expense of the Bulletin.

Executive Committee,
Medical Alumni Association

DR ARNOLD D. TUTTLE TO RECEIVE ALUMNI HONOR AWARD

By nomination of the Medical Alumni Association, Arnold D. Tuttle, M.D., D.S.M., Col., M.C., USA, (ret.), class of 1906, will receive the annual Alumni Honor Award and gold key on Alumni Day, Friday, June 9, 1950. Dr. Tuttle, who is Medical Director for the United Air Lines with offices in Chicago, is a pioneer in aviation medicine and for his contributions to this important medical specialty, the Medical Alumni Association bestows upon him this honor.

Following his graduation from the School of Medicine, he was an honor graduate of the Army Medical School and served on General Pershing's staff in France during

World War I. He later served in the Surgeon General's Office and was Commandant of the Army School of Aviation Medicine from 1934–37.

He then became Medical Director for the United Air Lines. Dr. Tuttle was co-founder and first president of the Air Lines Medical Directors Association and is president-elect of the Aero Medical Association. He was recently awarded the John Jeffries award for "outstanding contributions to the advancement of aeronautics through medical research". His activities with United Air Lines have resulted in the organization of one of the first air line medical departments and through the efforts of his department have ensued numerous improvements in air line travel achieved through the application of military medical research to commercial aviation.

DR. ARNOLD D. TUTTLE

Dr. Tuttle will be the honored guest of the Medical Alumni Association and will address the annual meeting on June 9th.

NOTICE OF REUNIONS AND ALUMNI DAY

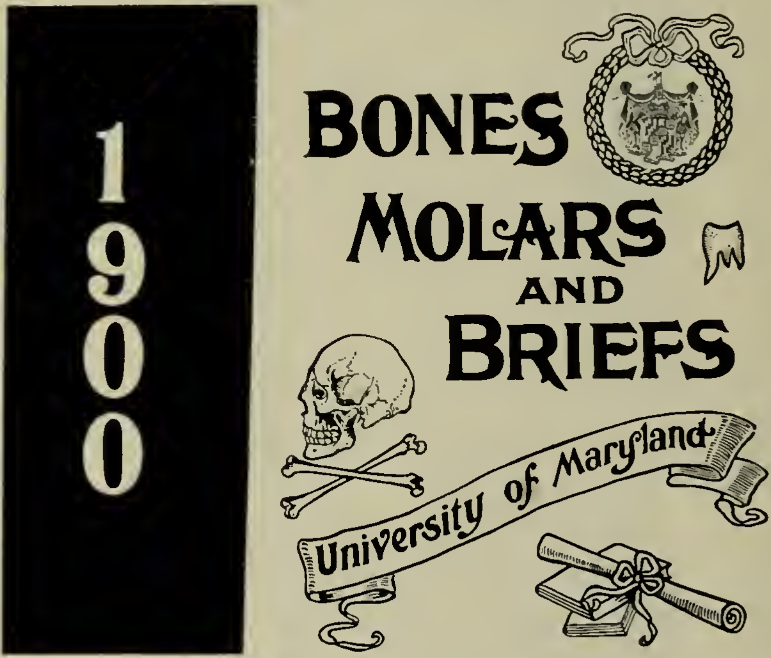
The Board of Directors of the Medical Alumni Association have designated Friday, June 9, 1950, as the Annual Alumni Day and have made extensive preparations for an interesting scientific program, luncheon and the annual banquet.

A committee consisting of Drs. Thurston R. Adams, Albert E. Goldstein and

William H. Triplett are in charge of this program, notice of which will be mailed on or about May 10th.

Class reunions this year will be held for the following classes: 1900; 1905; 1910; 1915; 1920; 1925; 1930; 1935; 1940; 1945. Alumni in classes holding reunions are advised to contact their class Chairman for many reunion classes are planning special meetings before and after the Alumni Day festivities.

For those who desire, the Alumni Office will again secure hotel accommodations upon proper application. Requests for such reservations should be addressed to Mrs. Minette E. Scott, Executive Secretary, Medical Alumni Association, University of Maryland, Lombard and Greene Streets, Baltimore 1, Maryland.

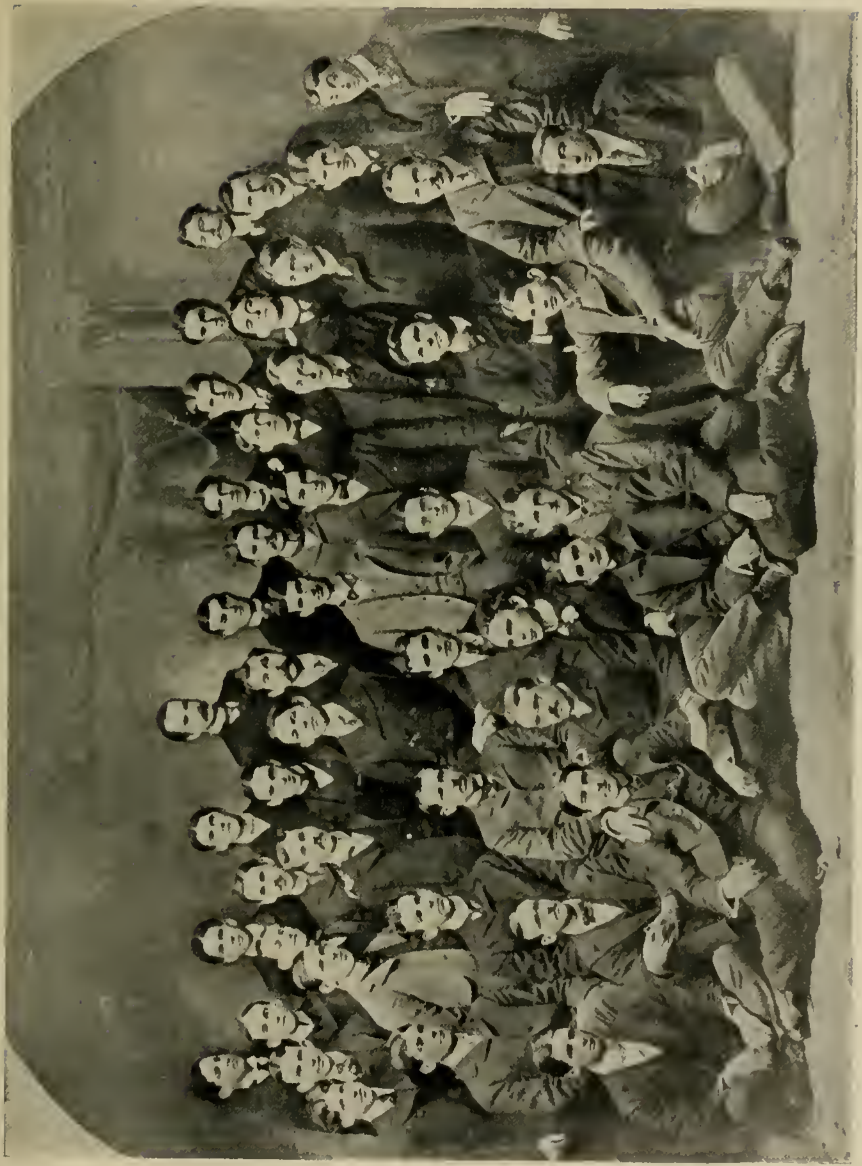


RESERVATION FORM

Secretary of the Medical Alumni Association:

I will will not be present for the Commencement Activities beginning June 9, 1950.

Kindly reserve a room——single........——double........
——Southern Hotel——Lord Baltimore Hotel.
Date and time of arrival..
Name...................................... Class.................
Address..
....



Class of 1900—Can you name them?

CLASS OF 1935 PLANS FIFTEENTH REUNION

The class of 1935 is now making plans for its fifteenth reunion on Thursday and Friday, June 8th and 9th, 1950. The local Committee on Arrangements is planning a cocktail-dinner party for June 8th to which all members of the class have been invited, in addition to certain members of the Faculty who will be present as guests. The class will again meet as a group at the Annual Alumni Banquet on Friday, June 9th.

The class of 1935 has had the two largest class reunions in the history of the Medical School. Sixty-eight members of the class returned for the fifth reunion and forty-eight at the twelth reunion. Chairman Harry M. Robinson, Jr. has received to date, fifty-two replies from those who expect to attend. Members of the local Committee include Drs. Harry M. Robinson, Jr., Chairman, Ernest I. Cornbrooks, Karl Mech, Edward F. Cotter, F. Edwin Knowles, Aaron Harris and Francis Dickey.

NEW ENGLAND CHAPTER MEETING

Dr. W. Houston Toulson, Professor of Urology, School of Medicine, will be a guest of the New England Alumni of the University of Maryland at their annual luncheon meeting which will be held in Boston on May 17th. Dr. Toulson will speak on the present status of the School of Medicine and its plans for the future.

Dr. Charles W. Finnerty of Somerville, Massachusetts, class of 1913, P & S, is Chairman of the New England Alumni group.

Reservations for the luncheon may be obtained through Dr. Charles E. Gill, 184 North Street, Pittsfield, Massachusetts.

REUNION OF THE CLASS OF 1940

The class of 1940 is holding a reunion in connection with the commencement activities in June. Members of the class who plan to attend, communicate with Dr. Raymond C. V. Robinson, 1001 St. Paul Street, Baltimore 2, Maryland. The committee in charge consists of Drs. Robinson, Edmund Beacham, F. Ford Loker and Donald Roop.

CORRESPONDENCE

Communication—B.M.C. Class of 1900

Sarasota, Florida, January, 1950

To the members of the class of 1900,
Baltimore Medical College:

The class of 1900, Baltimore Medical College, held two previous reunions, the first in 1911 and the second in 1925.

In the official Bulletin of the School of Medicine, University of Maryland, Volume 9, January, 1925, pages 114, 115 and 116 may be seen the communication to the class of 1900. At that time I wrote the members of our class not only to inform them, but also to stimulate them to take an active interest in the Twenty-fifth Reunion which was to take place at Baltimore in 1925. I mentioned that the class of 1900 graduated a total of 61 members, all of whom could be located except Dr. E. T. Khairallah, Alexandria, Egypt. Eight members were deceased. I now write the living members of our class to take an active interest in the Fiftieth Reunion of the class of 1900, Baltimore Medical College (now the University of Maryland), which is to take place at Baltimore on June 9, 1950. Twenty members are now living. If you were one of those present at the reunions in 1911 and 1925 at Baltimore, you no doubt heard every one remark that the notification was too short. Perhaps you were even one of those who could not come because you did not receive the official notice in time.

The time to prepare is now, so begin to plan your work at once to enable you to take your vacation in June, 1950, so as to be on hand for the reunion.

Class reunions at first, are taken very lightly. Later, as the years advance, they become more serious. The first questions asked are, "Who's here?", "whom have you met?" and "who will never come again?" The answers have a power to thrill a man beyond words.

A curious thing happens as time passes. You will notice the touch of gray in your classmates, but not in yours; or, if it is there, you had not noticed it. It is always the other fellow on whom a little whiting frost has fallen. You are puzzled at first, to know what has happened to some. They have the same ringing voice, the same big-hearted hand grasp. The returning class in 1950, as men, are very radically different in character from the boys of 1900. You will like the change in some. They have grown better. You may resent it in others, for you are sure they are hard and shrewd to sharpness, having lost warmth by time.

Now, as a final effort, I wish you to commence the very moment you read this letter to make plans to be present at the Fiftieth Reunion of our class which will take place at Baltimore in June, 1950 and which will be held at the University of Maryland. Notice of the Reunion is contained elsewhere in this edition of the Bulletin. Special notices will soon follow by mail.

I wish to see you, and trust you want to see me. You surely want to see your roommate or some member of your class. Now don't you?

G. Allen Troxell, M.D.
Route 3, Box 340 A
1622 Charlotte Street
Sarasota, Florida

"Many thanks for your letter of November 17th and your request that I serve as contributing editor from the New England area.

I would be glad to serve in that capacity, whether my name was listed on the mast head or not. My largest contribution would be in the nature of Alumni personals from this area and very little of scientific material could be passed along. I have been acting as "leg man" for the New England Alumni since we first started the annual Alumni luncheons which are staged each year on the second day of the three-day Massachusetts Medical Society annual meeting. That draws a good crowd, and most of our men will turn out for that, if for nothing else. We resumed our meetings in 1948 and again in 1949 after my war-time absence, and are looking forward to another gathering in 1950 in Boston. My directory of New England Alumni was thrown out of order by my war-time absence and the fact that the last American Medical Directory came out in 1942. We hope to have another one in the next few weeks which will enable us to bring the list up to date with respect to the new men.

As of last May, we had 300 men from the three schools in the six states. We had about thirty present at our last meeting, which is not bad considering that most of them graduated prior to 1910. I am sure there are flocks of young men whose names we do not have because the directory has been out-dated for some years. We will rectify that and also expect a larger turn-out in May, 1950 because we are asking one of our Baltimore men to attend the luncheon as guest speaker. That will be news in due course, and maybe there will be an advance announcement in time for your April issue.

I am also able to keep in touch with deaths through my reading of the J.A.M.A. and the New England Journal of Medicine. The same end is also accomplished by my knowing so many of the men first hand and reading six daily papers which cover this area pretty well with respect to deaths.

The enclosed items are probably new to you and might well be carried in the next issue after checking. I should have a few more before the January 15th deadline and will gladly pass them along."

Dr. Charles E. Gill (class of 1927)
184 North St.
Pittsfield, Mass.

Editor's Note.

New England Alumni may contribute news items for the Bulletin either through Dr. Gill or directly to the Medical Editor.

December 1, 1949.

Please accept my many thanks for the beautiful fifty year Alumni certificate issued by the Medical School of the University of Maryland. Long live the University of Maryland.

Respectfully,
William I. Hill, class of 1897
Albemarle, North Carolina

February 9, 1950.

May I thank the Alumni Association for the certificate of fifty years of practice which I received last November, and also apologize for the delay in doing so.

It is not only very attractive but the sentiment also is something to be proud of. I have always endeavored to live up to it.

Very sincerely yours,
Robert C. Gwin, class of 1895 B.M.C.
180 St. Paul Street
Brookline, Massachusetts

Bulletin OF
THE SCHOOL OF MEDICINE
UNIVERSITY OF MARYLAND

VOLUME 35 *July, 1950* NUMBER 3

PROPHYLACTIC USE OF ANTICOAGULANTS IN THE PUERPERAL PERIOD (DICUMAROL, HEPARIN AND LINK COMPOUND 63)*,**

CHARLES E. BRAMBEL, Ph.D.,[1] RICHARD E. HUNTER, M.D.,[2] and VINCENT de P. FITZPATRICK, M.D.[3]

BALTIMORE, MARYLAND

INTRODUCTION

Since Mauriceau (1, 3), in 1668, first described the condition and Puzos (2, 3), in 1759, gave it the name "Milk Leg", puerperal thrombophlebitis has been an ever present problem to the obstetrician. In no medical or surgical state are the three main etiologic factors of, 1. venous stasis (4, 5), 2. an accelerated clotting tendency (6, 7, 8, 9, 10) and, 3. traumatized areas surrounding the vein (11, 5), as prevalent as in the parturient woman or the early postpartum case.

The frequent occurrence of varicosities and dependent edema during pregnancy attests adequately to the presence of venous stasis. Increased intra-abdominal pressure resulting from the growing uterus and inhibition of the gastrointestinal tract exerts pressure in direct ratio to the pelvic veins and ultimately to the veins of the lower extremity. Some investigators feel that the physiologic arteriovenous shunt formed by the placental circulation is of even more importance in increasing the venous pressure of the lower extremities.

Pressure caused by the descending fetal head on the pelvic structures during labor or to manipulation of the obstetrical forceps during delivery may result in a trauma-

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This paper was presented February 10, 1950 before the Obstetrical and Gynecological Section of the Baltimore City Medical Society.

Received for Publication May 7, 1950.

* From the Departments of Clinical Biochemistry, Obstetrics and Gynecology, Mercy Hospital, Baltimore; and the Division and the Department of Medicine of the School of Medicine, University of Maryland.

** Link compound 63 was generously supplied through the courtesy of the Abbott Laboratories, North Chicago, Illinois. (Cumopyrin)

[1] Clinical Biochemist, Mercy Hospital and Instructor in Medicine, School of Medicine, University of Maryland.

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[3] Resident Obstetrician, Mercy Hospital, Baltimore.

tized area surrounding pelvic veins. Frequently a chronic low-grade pelvic inflammatory process or an acute puerperal infection is also present to further predispose to thromboembolic disease. Allen, Barker and Hines (12) estimate the frequency of puerperal thrombophlebitis as 0.4 to 1.0 per cent. Consideration of infected cases alone gives a higher incidence. Kneiss (13) found evidence of thrombophlebitis in 20 of 89 autopsies in fatal cases of puerperal infection, and Rivett (14) in a study of 533 patients with severe puerperal infection found extension to the veins in fifty-six.

The morbidity of vascular complications deserves serious consideration. Even more attention must be given to the mortality arising from the embolic phenomena associated with thrombophlebitis. At the Margaret Hague Maternity Hospital there have been 253 maternal deaths since it was opened in 1931 (15). Fifteen of these or 6 per cent. resulted from embolic phenomena. On a larger scale, the Maternal Welfare Committee of King's County, New York, reported 794 deaths in 395,655 deliveries from 1938 to 1945 (16). Eighty-nine of these deaths or 8.9 per cent. were embolic. Eleven died every year from pulmonary embolism.

A number of investigators have reported alteration of the clotting system of blood during pregnancy and the puerperal period favoring increased coagulability (6, 7, 8, 9, 10). Rush (6), using Quick's (17) one-stage procedure observed that undiluted maternal plasma was 130 per cent. of normal undiluted controls. Field, Overman and Baumann (7) noted that in the rat during the last week of pregnancy, prothrombin activity of 12.5 per cent. plasma was definitely increased. Brambel and Loker (9) have shown that at the time of parturition the prothrombin clotting time of diluted plasma (12.5 per cent.) is significantly shortened while undiluted plasma revealed only a slight change. Similarly, Cotlove, Spiro and Vorzimer (10) in their series demonstrated progressive decrease of the prothrombin time of diluted plasma as the period of gestation lengthened.

Prophylactic use of anticoagulants during the puerperal period has not been popular because of envisioned bleeding hazards associated with the use of such drugs or because of the possible deleterious effects to the nursing infant. Several groups of investigators (18) have shown that dicumarol does not increase puerperal blood loss nor does it increase the incidents of puerperal hemorrhage. Brambel and Hunter (19) showed that the nursing infant is not affected by the mother's ingestion of dicumarol. With this understanding, dicumarol has been used prophylactically by the obstetrical service at the Mercy Hospital for the past four years. The results of this program comprise the data reported herewith.

CLINICAL MATERIAL AND METHODS

Two groups of patients have been used in this study. Group I comprises 3,318 postpartum patients who serve as the untreated series. Group II comprises 3,284 patients who received dicumarol prophylactically during the puerperal period. Both groups include caesarean sections as well as vaginal deliveries. The mothers were allowed to nurse their babies as desired in both groups.

In group II prothrombin determinations were obtained as soon as it was practical after delivery. Dicumarol administration was started 12 to 24 hours following delivery. Prothrombin clotting times were determined 36 hours after each administration of the drug and further dicumarol dosage depended upon the findings of these tests. In general, sufficient doses were administered to bring the prothrombin clotting time up to 25 to 30 seconds (40 to 50 per cent. of normal). The initial dose was 200 mgms. and throughout her stay of five to seven days the average mother received 600 mgms. of dicumarol.

Recent investigations (20, 21, 22) reveal that the blood coagulation process, normal and pathologic, appears as an interplay of a number of opposing factors. The various components necessary to retard or accelerate clotting are present in the circulating blood. Hence, the fluid state is maintained as a result of a dynamic balance between factors accelerating coagulation and those inhibiting the process.

The modified Quick's one-stage procedure measures the resultant effect of the opposing groups of clotting components rather than the amount of any single entity. The terms "hypercoagulability" and "hypocoagulability" seem to be more appropriate than "hyperprothrombinemia" and "hypoprothrombinemia". From a clinical point of view it appears more feasible to determine the summation coagulation effect than the magnitude of any specific component when the available anticoagulant drugs are used. Dicumarol has been administered by the authors in conservative dosage with a view to offset the increase in the thrombogenic property of the coagulation accelerating factors in circulating blood.

The thromboplastic reagent for this test was prepared by acetone extraction of fresh rabbit brains with some modifications (23) after the method described by Quick. No preparation was used unless it yielded a coagulation time of 14 to 15 seconds for normal undiluted plasma and 75 to 85 seconds for a 12.5 per cent saline dilution. The modification proved effective in maintaining reproducible values in the tests. *Uniformity is most essential when comparability of data is required.* Routine tests consisted of determinations on undiluted and saline-diluted (12.5 per cent.) plasma. The relative degree of inhibition of the clotting mechanism in terms of percentage of normal after dicumarolization was obtained from an accumulated series of saline dilution curves of normal plasma.

Even though dicumarolized patients have been proved to be reasonably free from hemorrhagic complications in the present series of cases, each patient was carefully watched clinically and when the prothrombin clotting time was found to be above 35 seconds (30 per cent. of normal), 72.5 mgms. of a synthetic vitamin K derivative (Hykinone) was given intravenously. Such a procedure increased the margin of safety and prevented hyper-reaction to the drug.

Dicumarol (24) was used predominantly during this investigation. In one case heparin was administered where it was felt that immediate anticoagulation therapy was essential. A new dicumarol analogue (Compound 63: (3,4-(2′-methyl-2′-methoxy-4′-phenyl)-Dihydropyranocoumarin) was synthesized (25) and studied for its anticoagulant properties by Link and his coworkers. The available evidence (26) indicated that this 4-hydroxycoumarin had more rapid action, longer duration and was without hemorrhagic manifestations. Compound 63 was used in one case where rapid induction of decreased coagulability of blood was desired.

The majority of postpartum patients showed more resistance to dicumarol than is customary and this necessitated larger doses of dicumarol before the prothrombin time was affected. However, when the prothrombin time began to change it changed rapidly and therefore required daily checking. Very few patients were found to be hyper-reactors to dicumarol. On the other hand, patients in a toxic state or those suffering large areas of tissue damage at time of delivery were found to be refractive. For these reasons the maintenance and production of a selected level of decreased prothrombin activity by dicumarol became an individual problem.

A middle course was taken in regard to early ambulation of both groups of patients. This study began in 1946 when the average physician had discontinued keeping the patient in bed two weeks following delivery. In both groups the average vaginal delivery was allowed out of bed on the fourth or fifth day and caesarean sections in general were allowed up on the seventh or eighth post-operative day. Ambulation in both groups was initiated at approximately the same time.

RESULTS

Group I. (Untreated Group). In this series there were 3,318 patients. Sixteen cases of thromboembolic disease occurred in the postpartum patients who did not receive dicumarol prophylactically. These sixteen cases included ten cases of thrombophlebitis, three cases of phlebothrombosis and three cases of pulmonary emboli. Three of these cases, including two cases of pulmonary emboli, have subsequently been delivered again. All received dicumarol prophylactically without recurrence of thromboembolism. All cases, except one, were treated with dicumarol following their vascular lesions and all, except one, recovered completely. This patient who did not receive dicumarol, was found dead on the sixth postpartum day without having had any warning sign of pulmonary embolism or opportunity for treatment. The incidence of thromboembolic disease in Group I, the untreated group, is 1 in 207 cases or 0.48 per cent. This compares with the lower levels of incidence of puerperal thromboembolic disease that Allen, Barker, and Hines (12) have estimated for this country.

In this group there were twelve late postpartum hemorrhages. All required curettage and blood transfusion. These hemorrhages as a rule occurred later than in the group which received dicumarol and usually between the second and the third week, postpartum. Only 5 of these cases showed retention of placental fragments on curettage. Bleeding ceased after curettage except for one case which required direct massage of the uterus. The incidence of late postpartum hemorrhage in Group I was 1 in 276 or 0.37 per cent.

Group II. (Treated Group). This comprised 3,284 patients who received dicumarol prophylactically during the postpartum period. There were two patients in this group who developed superficial thrombophlebitis. This represented an incidence of 1 in 1,642 cases or 0.06 per cent. for the dicumarol treated group.

There were seventeen late postpartum hemorrhages in this group representing 1 in 193 patients or an incidence of 0.51 per cent. All of these required curettage. Of these seventeen only two had elevations of their prothrombin times at the time of hemorrhage (25 seconds and 30 seconds), and on curettage one of these showed large fragments of placental tissue still retained in the uterine cavity. Eleven of these late postpartum hemorrhages showed retained placental tissue on curettage. Two patients continued to bleed following curettage. Both of these eventually required supravaginal hysterectomy. Postoperative examination of the uterus showed fragments of placenta and in one case an endometrial polyp. The other patient showed advanced adenomyosis of the uterus. The last case was that of a patient who received large doses of stilbesterol. The time of bleeding coincided exactly with the time of withdrawal of this drug.

There was only one case of bleeding from a different source than the uterus. This patient had bleeding from the gastro-intestinal tract nine days following delivery. There was no unusual bleeding from the genital tract. Exhaustive study failed to locate the site of hemorrhages. It subsided as insidiously as it began, but dicumarol must be implicated at least tentatively.

All mothers were allowed to nurse their babies if they so desired. The infants were frequently examined but there was never any evidence of any hemorrhagic manifestations. This observation further substantiated the work done previously (18).

Summary Table of Incidence of Vascular Complications and Postpartum Hemorrhage

	NUMBER	VASCULAR COMPLICATIONS		THROMBOEMBOLIC DEATHS		POSTPARTUM HEMORRHAGE	
		Number	%	Number	%	Number	%
Untreated (Group I)	3,318	16	0.48	1	0.03	12	0.37
Treated (Group II)	3,284	2*	0.06	0	0	17	0.51
Total	6,602	18	0.27	1	0.01	29	0.43

* These cases, in a strict sense, are not considered failures of the prophylactic program. See text.

Seventeen Postpartum Hemorrhages in Treated Group: Therapeutic Measures Required

	HEMORRHAGIC COMPLICATIONS		PER CENT OF TREATED GROUP
	Number	Per cent	
Curettage Alone	8	47	0.23
Curettage Plus Transfusion	7	41	0.22
Further Surgery (Hysterectomy)	2	12	0.06
(A) Adenomyosis 1			
(B) Endometrial Polyp 1			
Total	17	100	0.51

DISCUSSION

Thromboembolic complications occur in slightly less than one out of every 100 postpartum patients (12). Approximately one in 4,000 postpartum patients will die of a pulmonary embolism according to the report of the Maternal Welfare Committee of King's County, New York (16). With these statistics as a guide it must be emphasized that a program which will improve these figures must be relatively free from hazard. Therefore, the oral anticoagulants (dicumarol, compound 63, Phenylindanedione, Tromexan) if used routinely during the postpartum period should have a wide margin of safety.

The therapeutic effect should be readily and predictably controlled by suitable (simple) laboratory procedures before hemorrhagic manifestations are clinically apparent. Counteractants should be available to check and to restore to normal the depressed blood clotting mechanism if bleeding occurs: or, if the degree of inhibition of the blood clotting components progresses beyond the desired range and hemorrhage is anticipated: or, if a serious hyper-reactor to the drug is encountered. Synthetic Vitamin K derivatives (27), Vitamin K_1 oxide (28), whole blood (29, 30) and blood plasma have been used with varying degrees of success depending upon the severity of reaction.

It is not the purpose of this paper to present a critique of laboratory method, even though it is the most important issue involved, but rather to present clinical data obtained as the result of an elected routine program. Much work still remains for the satisfactory development of adequate procedures. There are undoubtedly more precise one-stage methods than the one used in this study. The two-stage procedure, as simplified by Seegers (20) and his coworkers, yields data of a quantitative nature for some of the clotting components.

Dicumarol, in general, satisfies the clinical requirements. It can be orally administered and manifests no chronic toxicity in conservative therapeutic doses. Failure to appreciate the limitations of oral anticoagulants on the part of many clinicians, however, has been a serious drawback and hampered their use. It is probably for this reason that severe and unwarranted criticisms have been leveled against their clinical use. Some of these drugs not only affect the blood clotting system by inhibiting tissue production of prothrombin or neutralizing activators (31, 32) but also affect vascular integrity. This latter phase has not received sufficient consideration and is more serious than the induced hypocoagulability of blood. In this connection, there are several questions that require answering. Is the phenomenon caused by some specific effect of these drugs upon the endothelium of the capillary wall? If the blood were rendered completely incoagulable and the vascular tree were intact and strong, would bleeding then occur? In its constant daily wear and tear as a consequence of circulating fluid tissue, does the endothelium depend for its integrity in some manner (at present unknown) on a normally coagulable blood? The available methods for ascertaining or measuring capillary strength are unsatisfactory. Fragility of capillaries is a separate problem and is known to be influenced by factors other than anticoagulants. The effectiveness and relationship of vitamin P derivatives (Hesperidin, Rutin, etc.) in the problem of capillary weakness is yet to be determined by future investigations.

The precise degree of inhibition of the blood clotting system for effective prophylaxis against thromboembolism is another point which has not been established with certainty. The conservative pattern of depressing the clotting mechanism to just below 50 per cent of normal has proved effective in several clinical categories previously investigated at Mercy Hospital (33, 34, 35, 36). Only further accumulation of clinical data will establish the selected effective and safe level of decreased clotting activity of blood. It must be borne in mind that the degree to which anticoagulation is to be pushed must depend on the type of case. Thus, previous history of thromboembolic disease will warrant drastic anticoagulation as opposed to conservative depression of the clotting components. In routine prophylaxis, on the other hand, conservative inhibition may be effective, as has been experienced.

The rationale for administering any anticoagulant to postpartum cases is to counteract the potential hypercoagulability of maternal blood, as demonstrated by laboratory test and by resistance to this form of therapy. It is to be emphasized that such a procedure controls only one of several factors in the etiology of the thromboembolic disease (37). The clinical results obtained, however, have been most encouraging.

Earlier studies revealed that maternal blood manifested evidence of hypercoagulability compared with normal when diluted plasma was used (6, 7, 8, 9, 10, 19), while the newborn revealed hypocoagulability or prolonged prothrombin times (6, 8, 19). These findings in the mother were considered as a detection of increased prothrombin activators and were interpreted as indicating a predisposition to puerperal thromboembolism. The above evidence is supported by the work of Randall and Randall (22), who interpreted the decrease in prothrombin activity of the newborn to result from a deficiency of an accelerator factor for the conversion of prothrombin to thrombin. Similarly, Owren (21) (in an adult) showed that prothrombin clotting times, as determined by the one-stage procedure, may be caused by a decrease of a factor other than prothrombin.

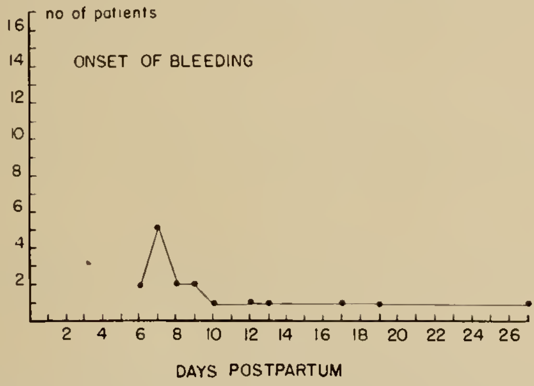

Fig. 1. Day of onset of late postpartum bleeding in treated group. The average day of onset in the untreated group occurred between the tenth and twenty-first day postpartum. See text.

Oral anticoagulants (dicumarol, compound 63) (24, 25, 26) have been used conservatively with the idea of counteracting the effect of the excess of activators or accelerators present in maternal blood, and so inhibiting thromboembolic disease. The same rationale has been used during the investigation of other clinical conditions: i.e. surgical (33) and medical (34). Evidence is accumulating that oral anticoagulants affect the activator components of the blood clotting system to a certain degree as well as inhibiting prothrombin production by the liver (22, 31, 32). In anticoagulation this is the important physiologic effect to accomplish, rather than the drastic inhibition of prothrombin production. When prothrombin production by the liver is severely inhibited it is then that difficulty in controlling hemorrhage may be encountered and fatality from this cause may follow.

The data presented in this paper shows conclusively that the use of dicumarol prophylactically in the puerperal period can reduce the incidence of thromboembolic complications to almost 0. per cent. Two cases of a thrombophlebitis occurred in the dicumarol group. However, one case had only a transient thrombophlebitis and it is debatable whether it should even be included as a failure (39). This patient had been in bed for 5 days before caesarean section was performed and the phlebitis apparently developed before dicumarol had been ingested long enough to affect the prothrombin time.

The second case, a thirty-three year old para II with extensive varicosities of the vulva and lower extremities developed a painful nodule over the lateral side of the right calf. Onset of symptoms occurred 14 hours after the first dose of 200 mgms. of dicumarol. The initial prothrombin time was 13 seconds for undiluted plasma and 35 seconds for 12.5 per cent. plasma. She proved refractile to dicumarol and symptoms increased for the next twelve hours. Intense dicumarol therapy was instituted. When the prothrombin time for whole plasma reached 27 seconds all subjective symptoms disappeared. The calf of her right leg remained tender for another 24 hours. After this all signs and symptoms disappeared permanently. She was maintained at 40 per cent. of normal as a hospital patient for 6 days longer and then treatment was continued as an outpatient for 3 weeks. At this time she was discharged, symptom free.

In contrast, the control group had sixteen thromboembolic complications including 1 death from pulmonary embolism. It should be recalled that the incidence of thromboembolic complications at this hospital was only 0.48 per cent. which is somewhat lower than average.

Although this study was made primarily on the prophylactic value of dicumarol, a few words should be mentioned concerning the therapeutic effect of anticoagulants on the cases in the control group which developed thromboembolic disease.

One case is that of a 26 year old para II who was delivered on February 19, 1950. There were extensive varicosities of the entire right saphenous system. Early on the morning of February twentieth she developed a painful nodule in the saphenous vein in the middle third of the right thigh. Prothrombin time then was 16 seconds and 68 seconds (diluted). She received 200 mgms. of dicumarol and on the following day prothrombin time dropped to 14 seconds and 38 seconds. There was a definite area of redness about the nodule and a cord-like induration along the vein extending from mid-thigh to the groin. She received an additional 200 mgms. of dicumarol and an additional 300 mgms. the following day. By February twenty-third, the prothrombin time was 30 and 400-plus. She was maintained at this level. By February twenty-seventh all nodules, swelling and tenderness had subsided. She was discharged that day and continued on dicumarol therapy as an outpatient for 5 weeks. At the time of her 6 weeks check-up there was no sign of phlebitis and there were no sequelae.

The second case is that of a 29 year old para III who was delivered at 5 a.m. on March 14, 1950 by means of outlet forceps following a central episiotomy. At 8:30 a.m. the prothrombin time was found to be 15 seconds for undiluted plasma and 50 seconds for 12.5 per cent. plasma diluted with normal saline. This patient had numerous large and painful varicosities of the vulva and extremities. Arrangements had been made for ligation following delivery. At six p.m. on the day of delivery she recieved 200 mgms. of dicumoral. On March 15 at 1 a.m. she began to complain of a severe pain in the right thigh and groin. An examination revealed a mass of tender, thrombotic veins overlying and completely surrounding the right fossa ovale. The clot extended to the saphenous-femoral junction, but there was no apparent extension into deep circulation. The leg was immobilized and elevated. At 11 a.m. her capillary clotting time was 3½ minutes and her prothrombin time was 17 seconds undiluted and 50 seconds (12.5 percent. dilution). She was given three intravenous injections of 10 mgms. of Heparin at 4 hour intervals. Since this did not produce the desired elevation of the clotting time she was started on Heparin by continuous intravenous drip. By midnight of March 15 her capillary clotting time had reached 16 minutes. (There was no increase in the amount of lochia despite the fact that she was less then 48 hours postpartum.) At 3 p.m. on March 15 she was given 100 mgms. of Compound 63. And another 50 mgms. at midnight. By 3 p.m. of the following day her prothrombin time had reached 31 and 400 plus, so Heparin was discontinued. She was then maintained on Compound 63. Her prothrombin time thereafter varied between 31 seconds and 65 seconds for undiluted plasma. Despite these high levels, the lochia never increased. She continued to have pain in her leg but the tenderness surrounding the involved veins decreased during the next 3 days. On the third day she showed evidence of retrograde extension of the process despite the fact that her prothrombin time was 44 and 400 plus. The medication was increased and the process subsided. Improvement for the next week was slow, but constant. She was allowed up on her eleventh postpartum day. She was discharged, ambulatory on her fifteenth postpartum day. There was no edema, no tenderness, and the size of the mass was diminishing. She has since been treated with Compound 63 as an outpatient and has been completely asymptomatic. In all, she received 310 mgms. of Heparin and 675 mgms. of Compound 63.

This case demonstrates many important facts. First, the degree of inhibition of the clotting mechanism with Heparin and Compound 63 without causing hemorrhage is impressive. Second, the failure of even a rapidly-acting anticoagulant to prevent thrombophlebitis if the process is initiated during labor. Third, the retrograde extension of the clot despite radical inhibition of the clotting mechanism. Fourth, the satisfactory conclusion of this case without ligation despite the precarious site of the thrombus.

Every patient treated with oral anticoagulants recovered completely and with no recurrences. Dicumoral was the principal therapeutic agent in most cases. One also had a femoral vein ligation. This ligation was done early in this study and there were none performed after that one. The patient had considerable difficulty with generalized edema for several months after the vein ligation but eventually the extremity returned to normal.

The fatality in the control group died very suddenly on the sixth postpartum day without any warning emboli. Autopsy was not performed but the opinion of the medical and obstetric staffs was unanimous in their dignosis of a fatal pulmonary embolism.

There was a slight increase in the incidence of late postpartum hemorrhage in the group receiving dicumarol. However, this increase was small and also it will be noted that 11 of the 17 patients in Group II who suffered postpartum hemorrhage had gross evidence of retained placental fragments whereas only 5 out of 12 in the control group had retained placental fragments. The cases which did not have retained secundines were classified as having had a subinvolution of the uterus. There were only 2 cases of late postpartum hemorrhage in the dicumarol group that had elevated prothrombin times. One of these cases had placental fragments on curettage; the other had none but stopped bleeding after the curettage. If the late postpartum hemorrhage occurred while the patient was on dicumarol, it was felt that there was a greater tendency for profuse bleeding, so in these cases, intravenous Vitamin K, plasma plus curettage promptly stopped the bleeding. The two cases in the dicumarol-treated group who required hysterectomy could hardly have had bleeding caused by the dicumarol since 1 patient had not taken dicumarol for 2 weeks. Placental tissue was found in the uterine cavity. The other patient had a normal prothrombin time. Hysterectomy proved an adenomyosis.

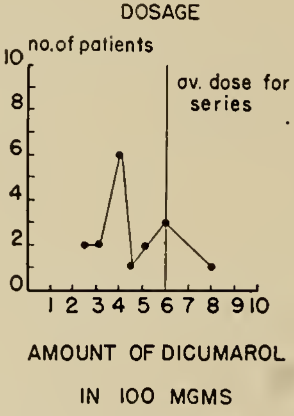

FIG. 2. Dosage distribution in cases of late postpartum bleeding. It is to be noted that the majority of hemorrhages occurred in patients receiving less than the average total dose of dicumarol.

The overall incidence of late postpartum hemorrhage is difficult to determine. There is a definite paucity of reports in the literature on this subject. Chiare and Robertson (38) reported an incidence of 1:250 to 1:350 patients including only those cases of late postpartum hemorrhage as a result of retained placental fragments, uterine abnormalities in involution of the placental site and separation of the decidua vera. These figures are approximately the same as those reported here in the untreated group which were 1:276 cases. The dicumarol group had a higher incidence of 1:193 cases.

An anticoagulant program such as is being carried out at this hospital is not recommended for general adoption. Administration of any anticoagulant to such a large number of patients requires a "full time laboratory" devoted entirely to such a prophylactic program. Few hospitals can maintain such a 24 hour complete service. A more practical prophylactic program would be to administer some oral anticoagulant to a selected group of patients. This group of patients would include those who had a caesarean section, difficult forceps deliveries, breech extractions, long labors and patients with a history of previous thromboembolic disease. In such a program the patients predisposed to thromboembolic disease would receive protection.

SUMMARY

1. The results of a four year prophylactic program using oral anticoagulants during the puerperal period are presented.
2. An untreated group comprising 3,318 patients and a treated group of 3,284 patients is compared.
3. Conservative depression of the clotting mechanism, controlled by frequent prothrombin time determinations, plotted against rigid unvarying controls is advocated. The need for comparable laboratory data is emphasized.
4. A new dicumarol analogue (Link Compound 63: (3, 4-(2′-methyl-2′-methoxy-4′-phenyl)-dihydrophyranocoumarin) was used successfully to obtain rapid and drastic anticoagulation. From limited experience no definite evaluation of the drug can be made.
5. The incidence of thromboembolic disease in the untreated group was 0.48 per cent (16 cases).
6. The incidence of thromboembolic disease in the treated group was 0.06 per cent (2 cases).
7. There was one death in the untreated group from a pulmonary embolism.
8. There were no deaths from any cause in the treated group.
9. The incidence of late postpartum hemorrhage in the untreated group was 0.37 per cent (12 non-fatal hemorrhages).
10. The incidence of late postpartum hemorrhage in the treated group was 0.51 per cent (17 non-fatal hemorrhages).

CONCLUSIONS

1. The foregoing data reveal an appreciable reduction in the incidence of venous thrombosis following parturition when oral anticoagulants are used prophylactically.
2. Conservative depression of prothrombin activity to 40 to 50 per cent. of normal gave satisfactory prophylaxis and no significant increase in the incidence of late postpartum hemorrhage.
3. No hemorrhagic manifestations were encountered in any of the nursing infants.
4. A reproducible and reliable laboratory procedure for gauging the anticoagulant effect is unequivocally essential for the success of a prophylaxis program.

The authors wish to express their appreciation to Doctors Thomas K. Galvin and John J. Erwin for their many helpful suggestions during the course of this study and in the preparation of the manuscript.

RESUMEN

Durante cuatro años los autores han usado dicumarol y otros compuestos anticoagulantes en la prevención de complicaciones trombo embólicas durante el período del puerperio. Presentan ellos datos estadísticos en 3,284 recién paridas que lo recibieron, comparadas con 3,318 que no recibieron el tratamiento profiláctico.

La incidencia de complicaciones en el grupo de control fué de .48% (16 casos con una muerte debida a embolia pulmonar) y de .06% (2 casos sin fatalidad) en el grupo que recibió dicumarol. Esta reducción fué obtenida mediante la depresión de la actividad de protrombina a 40–50% de lo normal. No se observó aumento en la incidencia de hemorragia tardía post partum. No hubieron manifestaciones hemorrágicas en los lactantes.

Los autores no recomiendan el uso rutinario de su técnica, ya que se necesitan facilidades extensas de laboratorio. Creen que hay un grupo de paridas en quienes el uso de anticoagulantes encuentra indicación. Dicho grupo incluye las que han sido objeto de cesárea, o aplicacion trabajosa de forceps; las que han tenido partos prolongados, o presentaciones anormales y las que dan un historial de previas complicaciones trombo embólicas. De esa forma se le ofrecerá protección a las recién paridas que estén predispuestas a dichas complicaciones.

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FURASPOR IN THE TREATMENT OF TINEA CAPITIS*†

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The fact that no specific agent has as yet been reported that will cure the majority of cases of *Microsporon audouini* infection of the hair led to investigation of the value of certain new preparations that have been reported to have vitro fungicidal activity by research laboratories. It was indicated by one of us (1) that many preparations which had been labelled as fungicides were, according to in vitro studies, only fungistatic. Roentgen epilation of the scalp has been the most satisfactory method of treating patients with Microsporon audouini infection of the hair, but there is the ever present hazard of permanent alopecia resulting. In the course of this investigation *Furaspor* (5-nitro-2-furfuryl methyl ether) which is a member of the nitrofuran family of therapeutic agents was used. The substance is a viscous, yellow liquid which was first prepared by Gilman and Burtner (2). It is soluble in water, one part in 500, at room temperature and has a boiling point of 104 C. to 105 C. at 1–2 mm. The pure substance is stable for some time if not stored in direct light, but it is sensitive to alkali and is largely decomposed on prolonged treatment with alkali. It was supplied in an emulsion type base in a 1–100 concentration, and in solution form in a concentration of 1–250.

In vitro studies were performed by the Eaton Laboratories' research staff to determine fungicidal activity of this substance against certain organisms among which were: *Trichophyton mentagrophytes*, *Trichophyton rosaceum*, *Microsporon lanosum*, and *Trichophyton purpureum*. Studies were not carried out on cultures of Microsporon audouini. The preparation was tested by a modification of the cup-plate method and according to the readings of the zones of inhibition, 5-nitro-2-furfuryl methyl ether exhibits marked in vitro activity as an antifungal agent against those organisms tested. It was apparent from the studies conducted that the emulsion type base 1–100 was the most satisfactory media in which to dispense this compound.

CLINICAL STUDIES

The studies on this material were carried out in the Department of Dermatology of the University of Maryland. A total of 133 patients was started on treatment with this compound. Each child was proved to have *tinea capitis* by examination under Wood's light, and following this, smears and cultures were made. All cases treated with Furaspor were proved to be infected with Microsporon audouini by culture on Saboraud's media. There were 66 white children and 67 negro children in this study and the ages ranged from 1 to 14 years. Forty of them received treatment for less than one month, primarily because of a lack of cooperation on the part of the parents who refused to bring the children in for observation. If any patient did not show satisfactory improvement after six months use of the drug the method of treatment was changed.

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† The material used in this study was supplied by Eaton Laboratories, Inc.
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METHOD OF TREATMENT

As soon as the diagnosis was established, the parent or guardian was instructed to shave the child's head and to repeat this performance once each week until the patient was discharged as cured. Parents were instructed to wash the scalp with soap and water twice each week. Each patient was furnished with a 2 ounce jar of the compound in emulsion base and was instructed to rub the preparation into the scalp lightly twice daily. In order to comply with the health department's regulations, and so that those of school age could continue with their studies, each patient was instructed to wear a washable white cap at all times. All cases were reported to the health department as cases of infectious diseases.

CHART I

AGE GROUP	RACE	SEX	NUMBER STARTED ON TREATMENT	RECEIVED LESS THAN ONE MONTH OF TREATMENT	CURES	NUMBER OF FAILURES AFTER 6 MONTHS OF TREATMENT	IMPROVED BUT TREATMENT CHANGED	SHORTEST TIME TO PRODUCE IMPROVEMET	SHORTEST TIME TO PRODUCE CURE	LONGEST TIME TO PRODUCE CURE	NUMBER OF UNCOOPERATIVE PATIENTS
1–5	N	M	26	9	6	2	6	1 month	3 months	12 months	3
		F	3	2	0	0	0				1
	W	M	11	5	4	1	3	1 month	3 months	12 months	1
		F	4	2	0	2	2	1 month			
6–10	N	M	32	11	12	0	5	1 month	2 months	12 months	4
		F	1	1	0	0	0				
	W	M	34	2	15	8	9	1 month	4 months	16 months	
		F	44	1	0	0	1	4 months			2
11–14	N	M	5	2	0	0	3	1 month			
		F	0	0	0	0	0				
	W	M	12	5	4	0	3	1 month	7 months	9 months	
		F	1	0	0	0	1	1 month			
Totals......			133	40	41	13	33	Average $1\frac{1}{3}$ months	Average $3\frac{4}{5}$ months	Average $12\frac{2}{5}$ months	11

Following the institution of treatment these patients were examined at bi-weekly intervals under Wood's light to determine if there was any improvement.

RESULTS OF TREATMENT

Of the 133 patients started on treatment with Furaspor, 40 received less than one month of treatment and of this group, 20 did not return after the initial visit to the clinic. There were 41 cures and 13 failures after 6 months of treatment. Thirty-three other patients showed some improvement after 6 months of treatment but this improvement was not considered sufficient to warrant the continuation of the same method of therapy, and some other drug was tried. The shortest time noted to produce any improvement was $1\frac{1}{3}$ months and the shortest time to produce a cure was $3\frac{4}{5}$ months. The longest time necessary to produce a cure was $12\frac{3}{5}$ months. The calculation of the percentage of cures based on the total number of patients treated was 30 per cent. If, however, the number of patients who received less than one month of therapy is deducted, then 42 per cent of the patients treated with this drug were cured. It must be emphasized at this point that a patient was not considered as cured unless there had been a complete absence of fluorescence for at least two months after all treatment had been discontinued. Eleven patients are listed as being uncooperative and this may be explained on the basis of failing to shave the child's head or failure to apply the ointment regularly.

CONCLUSIONS

1. Furaspor (5-nitro-2-furfuryl methyl ether) has been used in the treatment of 133 patients with Microsporon audouini infection of the hair.
2. Forty of these patients received less than one month of treatment, and 11 who received more than one month of treatment were uncooperative.
3. Of the total number treated 30 per cent were cured. When the number of patients who received less than one month of treatment is deducted the percentage of cures is 42 per cent.
4. Furaspor may be added to the armamentarium of the physician who has cases of tinea capitis under his care.
5. In this condition, there has been no sign of irritation, sensitization or toxicty for which treatment had to be discontinued.

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STREPTOMYCIN AS AN ADJUNCT IN THE SURGICAL TREATMENT OF TUBERCULOUS PERITONITIS*†

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During the past eight months five cases of tuberculous peritonitis have been seen on the surgical service of Baltimore City Hospitals. Since the disease is relatively rare and is considered generally to be on the decline, it was thought that it might be helpful to review these cases from the standpoint of treatment with streptomycin.

From a survey of the literature it appears that the pathogenesis of tuberculous peritonitis has remained a puzzle and the treatment has been without rationale. As regards the pathogenesis of tuberculous peritonitis, it is the general opinion of observers that the peritoneum is infected secondarily. The extension can be by the blood or lymphatics, by contiguity, or by rupture of a focus within the abdominal cavity. It was felt by Buchbinder (1) that the retroperitoneal lymph nodes are the most frequent primary site in children, whereas in the adult the infection spreads from tuberculous ulcers of the gut, from tuberculous fallopian tubes, or from a tuberculous appendix. Olcott and Paccione (2) believed that the infection of the peritoneum arises secondarily by contiguity from a hematogenous spread to either the fallopian tubes or the retroperitoneal lymph nodes. They quote the figures of Schlimpert, however, who found the intestine to be involved in 51 per cent. of the cases. With this high figure, Schlimpert felt justified in placing the most frequent primary focus within the intestines. Olcott and Paccione (2) and Faulkner and Everett (3) reported an incidence of 50 per cent and 45 per cent respectively of tuberculcus involvement of the fallopian tubes with tuberculous peritonitis in the female. The latter authors were of the opinion that since the microscopic sections of the tubes revealed an infection of the endosalpinx, the infection probably originated there with subsequent extension to the peritoneum. One cannot ignore the figures of Buchbinder (1) who found the lung to be involved in 92 per cent of autopsies of patients with tuberculous peritonitis. This report, being based on microscopic observations, should be regarded as more reliable than statistics based upon clinical evidence.

To simplify and consolidate these divergent yet significant theories of pathogenesis, the infection of the peritoneum appears to originate through two routes. There is general agreement that extra-pulmonary human tuberculosis arises from an hematogenous extension from the lung. This may be disseminated or miliary, or it may involve only one organ or tissue. When the peritoneum is involved alone in this manner, the typical syndrome of ascitic tuberculous peritonitis results, with or without a demonstrable pulmonary infection. On the other hand, with a hematogenous tuberculous infection of an organ contiguous to the peritoneum, a breakdown of the infection can result in a tertiary infection of the peritoneum. It can be postulated with fair certainty that this is the most common route of infection, as there is a high correlation of tuberculosis of contiguous organs with tuberculosis of the peritoneum.

The pathogenesis becomes apparent also when one considers the types of the dis-

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ease. In general, three clinical types are recognized: ascitic, with tubercles scattered throughout the peritoneal surface; adhesive, which is characterized by dense adhesions, matting of the viscera, and little fluid; and lastly, localized peritonitis with abscess formation.

The ascitic form is seen both in the acutely ill patient with an initial history of the disease, and also in the chronic tuberculous patient who has exacerbation and spread of disease. These two conditions are both compatible with hematogenous extension to the peritoneum. The first patient will usually recover, depending, of course, upon the extension to other organs, whereas the second form is characteristically a terminal state. The adhesive type appears to represent the more chronic form of the disease with attempts to heal being made by the peritoneum. The pathogenesis of infection does not appear to represent an acute infection, but seemingly a chronic spread from the gut, fallopian tubes, or lymph nodes. The localized type with abscess formation must be a simple variation of the adhesive type with walling off of the infection, either tuberculous or mixed, because of a breakdown of a caseous node or extension by contiguity from the fallopian tubes or gut. It is in this group that the complications such as bowel obstruction, abscess, and fecal fistula occur. The patients of this group have a high postoperative mortality as a result of these complications. Barrow (4) reported an incidence of 35 per cent of fecal fistula following exploratory laparotomy for this disease, but he does not classify the disease as the ascitic, adhesive, or localized type. In his 67 patients, only 1 fecal fistula was present preoperatively.

No differential study was made to determine human or bovine types of tuberculosis. The bovine type was undoubtedly a causative agent at an earlier time, but now most likely plays an insignificant role in the pathogenesis.

The development of the treatment of tuberculous peritonitis by exploratory laparotomy was the result of the improvement observed following this simple procedure in 1884 when Konig (5) first reported his favorable results. In 1890 Osler (6) reported the benefits of exploratory laparotomy in a case where death from pulmonary tuberculosis occurred some time after this operation had been performed. Apparent healing of the peritoneum was seen at autopsy. Browne (7) speculated on the cause of improvement following surgery as being related to increased vascularity because of trauma, liberation of fluid, decrease in intra-abdominal pressure, admission of sunlight, and possibly the anesthesia. He cited a case in which closed ether anesthesia was used for 30 to 40 minutes without operation, with cure apparently attributed to the anesthesia. He deduced that the agent may have penetrated the lipid covering of the organism, thus effecting the favorable response. He reserved this opinion, however, until the effects following spinal anesthesia could be studied.

In 1934 Stein (8) reported the use of oxygen pneumoperitoneum in the treatment of tuberculous peritonitis. He believed that this therapy benefits any tuberculous infection of a serous cavity and that the results are not caused by the withdrawal of fluid or to the presence of oxygen, but are more on a mechanical basis. If he noted no improvement with three injections, surgery was utilized to extirpate a possible focus. Van Antwerp (9) stated that there is no logic behind the use of oxygen pneumoperitoneum because the organism is highly aerobic. He thought that the relief of pain is undoubtedly mechanical and the procedure is otherwise valueless.

Buchbinder (1) emphasized his belief that the treatment should vary with the type of disease. In the ascitic type exploratory laparotomy is recommended, with evacuation of fluid. In the localized form the infective lesion should be excised. The surgical care should be accompanied by the routine sanatorial care of tuberculous patients.

ANALYSIS OF CASES

During the past 14 years 28 patients with tuberculous peritonitis have entered the surgical wards of Baltimore City Hospitals for exploratory laparotomy. Only 4 of the 28 were white. The ages varied from 10 to 63, the average being 29 years. The sex distribution was equal, 14 males, and 14 females. Of the 28 patients there were only 5 or 18 per cent without clinical evidence of tuberculosis elsewhere. All of the remaining 23 or 82 per cent had disease involving the lung, demonstrable by roentgenologic examination. Two of these 23 patients had pleural effusion alone and eight had pleural effusion associated with a parenchymal lesion.

Fifteen patients underwent exploratory laparotomy for the establishment of the diagnosis. Of the remaining 13, 5 were operated upon for bowel obstruction, 5 for appendicitis, two for pelvic abscess, and one for acute peritonitis. Of the group with bowel obstruction, there were 3 with true obstruction, necessitating lysis of adhesions; in 1 lysis was impossible, and the last had no mechanical obstruction. Appendectomy was performed three times in the group with a preoperative diagnosis of appendicitis. The two pelvic abscesses were drained; fecal fistulas developed postoperatively in both cases.

Spinal anesthesia was employed in 25 of the 28 cases, ether twice, and local anesthesia once.

Of the postoperative complications, fecal fistula occurred four times, an incidence of 14.3 per cent. Two fistulae occurred secondary to abscesses, and two in patients with the adhesive type of the disease. Three of the fistulae were not healed at the time of discharge or death, 1 patient dying in 1 year postoperatively. One fistula closed spontaneously with streptomycin therapy.

There were 8 deaths within 2 months postoperatively, an incidence of almost 29 per cent. Six of the deaths were the result of an extension of tuberculosis from other organs, 1 was secondary to bowel obstruction, and 1 followed acute peritonitis resulting from perforation of a tuberculous ulcer of the ileum.

During the past 2 years the surgical service has seen 5 cases of tuberculous peritonitis in which streptomycin was added in the treatment of the disease. Three of these patients had an associated pathologic lesion of the lung. All the patients have responded well to a 6 weeks course of streptomycin coupled with routine sanatorial care.

A brief summary of these cases is presented.

1. A 22 year old colored female was admitted with abdominal ascites and a pelvic mass. She had a spiking fever of 102 F to 104 F. Abdominal paracentesis yielded 3,500 cc. of foul-smelling purulent material from which E. coli was cultured, which was unresponsive to penicillin, sulfadiazine and a 25 gram course of streptomycin. Exploratory laparotomy showed adhesive tuberculous peritonitis with a pelvic abscess. Her postoperative course was complicated by a fecal fistula which subsequently

closed with streptomycin therapy. The patient was discharged asymptomatic, the disease apparently arrested, to remain in bed at home for 6 months.

2. A 16 year old colored male entered with fever, malaise, and abdominal ascites, and a lesion in the base of the right lung. Exploratory laparotomy established the diagnosis of ascitic tuberculous peritonitis. He had an uneventful postoperative course, being discharged following a 6 weeks course of streptomycin to rest in bed at home.

3. A 51 year old colored male entered with a diagnosis of bowel obstruction secondary to an incarcerated inguinal hernia. He had tuberculosis in the left chest with both pleural effusion and involvement of the lung parenchyma. On exploration of the hernia, ascitic tuberculous peritonitis was found. He was given a 6 weeks course of streptomycin and is now doing very well 6 months after operation, with resolution of the pulmonary lesion.

4. A 43 year old colored male was admitted with signs of acute abdominal disease with ascites. There was a minimal lesion in the base of the right lung. Exploratory laparotomy established the diagnosis of ascitic tuberculous peritonitis. He was placed on streptomycin postoperatively, during which time pleural effusion and a cold abscess of the chest wall developed, both of which have subsequently cleared. Six months after operation, however, he is still confined to bed, awaiting further treatment for the basilar lesion of the lung.

5. A 15 year old colored male came in with abdominal ascites and loss of weight. There was no associated pulmonary lesion. Diagnosis of ascitic tuberculous peritonitis was established by an exploratory laparotomy. He is making an uneventful recovery 6 weeks postoperatively after finishing his course of streptomycin.

A tabulation of all the cases is as follows:

Tabulation of Cases

	BEFORE STREPTOMYCIN			AFTER STREPTOMYCIN	
	Ascitic	Adhesive	Localized	Ascitic	Adhesive
Number of Cases	13	6	4	4	1
1. Involvement of lung	12	5	3	3	0
2. Fecal fistula	0	1	2	0	1
3. Recovered	9	3	0	4	1
4. Unimproved at last recording	0	1	2	0	0
5. Died two months postoperatively	4	2	2	0	0

DISCUSSION

As stated by Osler (6) in 1890, the course and prognosis of tuberculous peritonitis are dependent upon the extent of tuberculous involvement of other organs. This fact is well illustrated in the postoperative mortality in this series, as 6 of the 8 deaths within 2 months after operation resulted from an extension of the pulmonary or generalized disease. However, with the favorable response of the 5 most recent patients to streptomycin in conjunction with surgery, it is not unreasonable to assume that the mortality rate will drop with the use of this drug as an adjunct to surgical treatment. It can be stated without reservation that an elective exploratory laparotomy has not contributed to the mortality of the disease, and it is advocated for the establishment of the diagnosis. The highest mortality postoperatively was seen in those patients with relatively advanced pulmonary disease who developed abdominal pain, distention, or masses necessitating exploration. Autopsy in 4 of the 8 patients who died following operation demonstrated tuberculous lesions in the liver, spleen, intestines and lymph nodes, in addition to those in the lung. This finding suggests that with a breakdown of body resistance, a hematogenous extension of the organism can manifest itself terminally by an infection of the peritoneum, a condition suggesting an acute abdominal emergency. Conversely, those patients with few or no detectable lesions other than those in the peritoneum undoubtedly are having an initial reaction to a localized hematogenous spread, such as that seen with tuberculosis of the kidney or tuberculosis of the bone.

Except for the questionable value in the liberation of the fluid in the elective operation, it is doubtful whether an exploratory laparotomy offers any significant benefit to the patient. Cures result from conservative medical management in selected cases, with or without either surgery or streptomycin. The importance of surgery lies in the extirpation of a possible focus and the establishment of the diagnosis; the value of streptomycin lies in the control of extraperitoneal progression of the disease and of postoperative complications such as fecal fistula.

The course of treatment with streptomycin recommended by the Tuberculosis Division of the Baltimore City Hospitals has been established thus far as one gram daily for a period of 6 weeks, followed by routine sanatorial care for 6 months. The treatment has been extended in those cases where the extraperitoneal infection makes such extension advisable.

SUMMARY

1. Twenty-eight cases of tuberculous peritonitis seen on the surgical service of the Baltimore City Hospitals have been studied.
2. There were 8 deaths within 2 months after operation, an incidence of 29 per cent.
3. A discussion of the method of treatment of this disease with streptomycin as an adjunct to surgery is presented.
4. An uneventful postoperative recovery was observed in the treatment of 5 cases of tuberculous peritonitis where streptomycin was employed as an adjunct to surgery.

RESUMEN

Se presentan 28 casos de peritonitis de etiología tuberculosa estudiados en el servicio quirúrgico de "Baltimore City Hospitals", en los últimos 14 años. Los últimos 5 casos recibieron estreptomicina como complemento al tratamiento quirúrgico. Los autores utilizaron la laparotomía exploratoria de elección para establecer el diagnóstico. De los 23 casos que no recibieron estreptomicina, 8 murieron dentro de 2 meses de la intervención quirúrgica, con una mortalidad de 35% y 3 no fueron beneficiados por el tratamiento. Los cinco pacientes tratados con estreptomicina gozaron de un post operatorio satisfactorio. Los autores recomiendan la administración de un gramo de estreptomicina diario por un período de 6 semanas, seguido de tratamiento sanatorial por 6 meses, como complemento a la exploración del abdómen.

(*José A. Alvarez—de Choudens, M.D.*)

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ACRODYNIA

Report of a Case Treated with BAL*†

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Acrodynia, first accurately described by Swift[1] in 1915, is an unusual and bizarre symptom complex occurring in infants and characterized clinically by erythema of the hands and feet with subsequent desquamation; scarlet coloring of the cheeks and tip of nose; excessive perspiration, evanescent body rashes, photophobia, burning and pain of the extremities, anorexia, hypertension and marked irritability.

Many theories as to the cause of acrodynia have been advanced such as allergy, neurosis of the vegetative nervous system, arsenical toxicity, endocrine disturbance, ergotism and nutritional deficiency. That the whole process is a polyneuritis is supported by the pathologic changes that occur in the peripheral nerves and the irregular cellular changes in the bulb and cervical spine. In 1922 Zahorsky[1] suggested that mercury was the cause of acrodynia but discarded the suggestion because he could obtain no history of calomel intake in all of his patients. Recently Fanconi, Botsztgen and Schenker[2] published the report of a disease characterized by a macular rash resembling rubeola. They further stated that the disease resembled acrodynia and called it calomel disease, as it was caused by the ingestion of mercury given in the treatment of intestinal parasites. Bivings[3], following the report of Warkany and Hubbard[4] recovered mercury from the urine of a patient with acrodynia and successfully treated the patient with 2,3 dimercaptopropanol (British Anti Lewisite—BAL). Since Bivings' original report, thirty-one patients with clinical acrodynia have been reported and twenty-eight have shown mercury in the urine. The source of mercury in all cases was from calomel administration, from the use of teething powders that contained calomel, the use of ammoniated mercury ointment or from the use of diaper rinses that contained mercury bichloride. The response of the patient to BAL reported by Bivings and the reports of the finding of mercury in urine of the above cited cases seem to indicate that mercury has some part of the etiology of acrodynia. The frequent use of mercury and the infrequency of the acrodynia complex suggests that sensitization probably plays an important role in the production of acrodynia.

The following case is reported:

C. G., a white male infant, age eight months, was admitted to the pediatric department of the University Hospital on November 1, 1948 because of anorexia and irritability of one month's duration. The present illness began one month prior to admission following an upper respiratory infection. Treatment of the respiratory infection consisted of "white pills", which were subsequently determined to contain calomel. There was progressive irritability with increasing fever and anorexia.

Physical examination of the child upon admission showed a satisfactory nutritional state in a very irritable infant. There was a confluent erythematous rash on the cheeks and the tip of the nose. A faint pink, discrete erythematous and papular rash was present on the trunk and extremities.

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The palms of the hands and the soles of the feet were intensely red and mildly edematous, the area of redness being sharply demarcated from the skin immediately above. Photophobia was present and seemed to be most distressing as he made strenuous efforts to protect his eyes from natural and artificial light. The blood-pressure was moderately elevated to 120 mm. mercury, systolic and 89 mm. mercury diastolic. The temperature was 101.4° (rectal) and the pulse rate was 150 per minute. The remainder of the examination was essentially normal. Diagnosis was acrodynia.

Significant laboratory data were as follows: Hemoglobin 11.5 gms.; erythrocytes 4.82 million; leucocytes 14; differential (800) 60 per cent polymorphonuclear, with 1 per cent non-segmented and 59 segmented; 35 per cent lymphocytes; 4 per cent monocytes and 1 per cent eosinophils. Urinalysis except for a trace of albumin was essentially negative. Examination of the urine for mercury showed that mercury was present in a concentration of 80 gamma percent.

Course in Hospital

The patient was given BAL 0.33 cc. intra-muscularly every four hours for six doses, then 0.3 cc. every six hours for four doses then 0.30 cc. every twelve hours. This medication was continued from November 5 to November 26. Irritability gradually lessened under treatment. Sweating which had been prominent upon admission disappeared. Temperature returned to normal and the rash on the body and the hands and feet rapidly improved and by the tenth day of treatment had completely disappeared. An examination of urine for mercury on the tenth hospital day gave a negative result. The appetite improved and at the time of discharge, forty-three days after admission he was well except for mild photophobia.

DISCUSSION

The history of mercurial ingestion plus the recovery of mercury from the urine and the response of the patient to BAL with rapid disappearance of mercury from the urine and the rapid improvement of subjective and objective symptoms seems sufficient evidence that mercury played a definite role in causing the patient's illness. With the widespread use of mercurial preparations in the practice of pediatrics and the relative infrequent occurrence of acrodynia, the role of mercury may be questioned. If mercury is responsible for the symptom-complex of acrodynia it would seem that the production of the disease depends upon the sensitivity of the patient to mercury. If mercury is responsible for acrodynia it becomes incumbent upon the physician to be more circumspect in prescribing the use of preparations that contain mercury.

SUMMARY

A case of acrodynia is reported. Mercury was found in the urine; BAL therapy was instituted and recovery rapidly followed.

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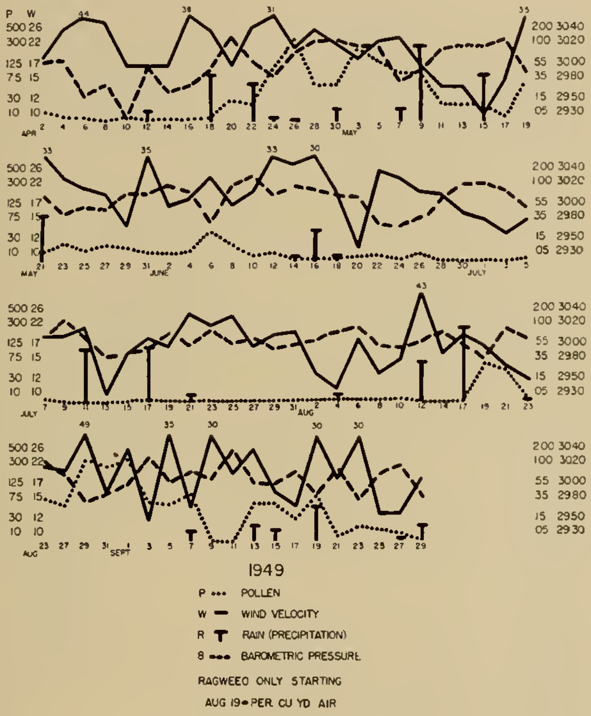
POLLEN COUNTS*†

HOWARD M. BUBERT, M.D. AND SELMA R. GOLDSMITH, A.B.

BALTIMORE, MARYLAND

In accordance with our practice an annual report is herewith given upon the pollen counts for the year 1949.



METHOD

The method followed during 1949 was the same as that used in 1948 (1).

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* From the Section on Allergy, Department of Medicine, School of Medicine, University of Maryland, Baltimore, Maryland.

† Received for publication May 15, 1950.

CLINICO PATHOLOGIC CONFERENCE

From the Case Histories—University Hospital, Baltimore

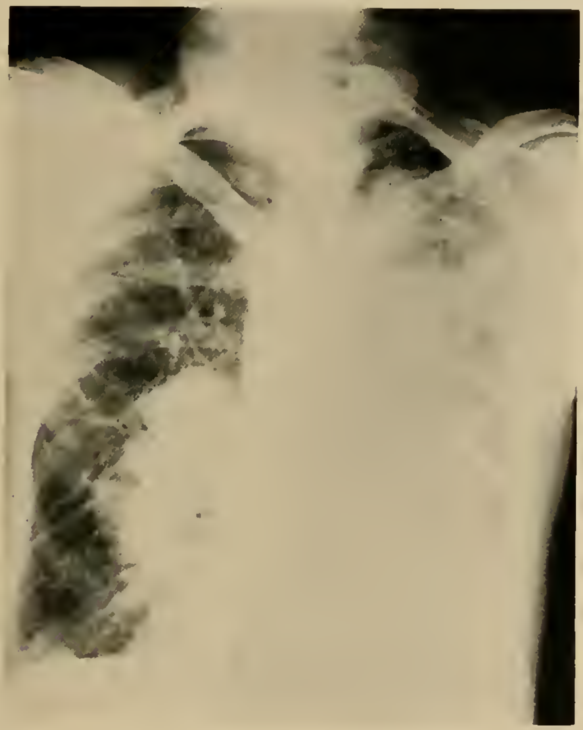
H. S., a white male aged 52 was admitted to the hospital on September 14th complaining of severe shortness of breath, orthopnea, cyanosis, ankle edema of two days' duration and a hacking cough productive of blood-tinged sputum of 24 hours' duration.

The family history revealed that the patients' mother had died in her 65th year of Bright's disease.

According to his relatives, he had periodic episodes of cyanosis since childhood because of heart disease but had not been hospitalized until the present. There was no history of restriction of activity, either at home or in his employment as a barber. He stated that he previously had "attacks" similar to the present illness during the years 1917–18 and also during the month perior to admission. These had been characterized by a dry cough which was more troublesome at night. The patient had slept in a semi-recumbent position for years. There was no history of exertional dyspnea. For a long time, he had noted that his ankles swelled during the day but returned to normal after a night's rest. A history of mild anginal pain was elicited. In July, 1947, he had an "attack" which necessitated temporary retirement. He was ordered to bed for one week. During that time, the ankle edema regressed entirely and cyanosis lessened. He returned to work, but for shorter hours. He had taken "heart medicine" in a haphazard manner for years, but since his last attack he had taken digitalis and aminophylline regularly. On September 13, 1947, because of fatigue, he stopped work earlier than usual and went to bed. He was dyspneic and cyanotic. Because his cough became progressively worse, he was admitted to the hospital.

An initial examination revealed his body temperature to be 101.4 F.; his pulse rate, 104 per minute; his respiratory rate, 28 per minute; and his blood pressure, 130 mm. Hg. systolic and 80 mm. Hg. diastolic. He was a well developed but slender white male, who obviously was suffering respiratory distress. Orthopnea and deep cyanosis of skin and mucous membranes were observed. The pupils were small but reactive. There was much viscid mucus in the throat. The neck veins were not distended. Deviation of the trachea to the left was seen. The chest moved as a whole during the respiratory cycle. Excursions on both sides were limited. The percussion note was resonant over the entire right hemithorax. Distant breath sounds, prolonged expiration, and a moderate number of coarse bronchial rales were heard. The note was flat on percussion of the left hemithorax below the second interspace at the midclavicular line, the fourth interspace in the axilla and the third in the scapular line. Breath sounds were almost absent in this side, but posttussive rhonchi were heard. Over the left posterior axillary line there was an area of cavernous or amphoric breathing. The cardiac apical beat was palpable over the anterior axillary line in the left sixth interspace. Cardiac rhythm was regular. The first apical sound was loud. A localized systolic murmur followed. Closure of the pulmonic valve was palpable. There was a palpable systolic thrill in the second and third interspace about six centimeters to the left of the sternum. A loud rough systolic murmur was heard at the left of the sternum, its maximum intensity being in the third interspace. The third pulmonic sound was accentuated. There was no abnormal tenderness or muscle spasm. The liver edge was doubtfully palpated. Pitting edema and varicosities of the lower extremities were present.

The patients' urine was normal. An examination of the blood showed the hemoglobin to be 124 per cent. (18.1 grams). The volume of packed red blood cells was 61 mm. Leukocytes numbered 10,850 per cubic millimeter of blood of which 95 per cent. were neutrophilic polymorphonuclear granulocytes; 3 per cent. lymphocytes, and 2 per cent. monocytes. The rate of erythrocyte sedimentation was 17 millimeters per hour. A serological test for syphilis was negative. Chemical studies of the blood were not helpful. The electrocardiographic tracing was not indicative of any specific cardiac abnormality. A roentgen examination of the chest showed a diffuse infiltration of the entire left lung. The mediastinum appeared displaced 3 cm. to the left. The left side of the diaphragm and the left border of the heart were obstructed. In the right hilar region there was a nodular infiltration that had the appearance of massed lymph glands. The entire area measured 10 cm. in diameter.



COURSE IN HOSPITAL.

On admission, 30,000 units of penicillin were given intramuscularly every three hours. Oxygen was administered per nasal catheter and potassium iodide and Demerol were included in the regime. Within 24 hours, his rectal temperature decreased to 99 F. Cyanosis had decreased but had not disappeared. Respirations had risen to 35 per minute. The Pulse varied between 100 and 110 per minute. The cavernous breathing discovered on admission disappeared and breath sounds became louder. On the last day of life the respiratory excursions became more and more shallow and the cyanosis became more and more increased. This cyanosis and the respiratory insufficiency were not relieved in an oxygen tent. After lapsing into unconsciousness, the patient died on September 16.

Dr. Kilby: This roentgenograph film was made the day after the patient was admitted to the hospital. A portion was omitted from the report that Dr. Gundry read. That part was considered erroneous. You will notice that there is a lobular mass in the right hilum. These round areas of increased density were thought to be glands. On the left you will notice increased density from a point just below the apex to the base. This density is homogeneous. You notice a transverse line with "dark" areas above. This indicates fluid. Evidently, there is fluid from this region to the diaphragm. Fluid in the pleural space is indicated by the straight line. There are many conditions in this chest the patholgists have not explained. I know what this patient had according to the pathologist's report, but I have not found an explanation for this density in the right thorax. Apparently, there are masses in the left hilum. In addition to hydropneumothorax, there is something in the lung. We presume that a similar condition exists on the left, but it is obscured. I did not recognize this patient's disease. Because he was seriously ill, we obtained only one film and we did not examine him by fluoroscopy. Such an examination might have led us to the right conclusion. I should tell Dr. Gundry that the pulmonary artery is extremely dilated. I do not know what caused the shadow in the left hilus and lung, but the straight line and all the opacity below informs me that there is fluid in the left pleural cavity. I think that pulmonary parenchymal infiltration is present. The diaphragm is obscured.

Dr. Gundry: When one considers this case, certain things come to mind. First, this man's illness has the appearance of being cardiac. If it is cardiac, one follows with determining the type of heart disease. I assume he had episodes of cyanosis since childhood and that he had definite physical findings over the base of the heart. A systolic thrill and loud rough systolic murmur in the second and third interspaces are noted during this admission. The history does not tell much about the murmur. I think that this murmur, with the severe cyanosis that he showed on admission, plus the hemoglobin of 124 per cent. are presumptive evidence that this patient had a type of congenital heart disease. If it is congenital heart disease, several varieties are to be considered. One is coarctation of the aorta. However, Dr. Kilby didn't report notching of the ribs. The recorded blood pressure was normal. The patient did not have symptoms of hypertension. This is at variance with a diagnosis of coarctation of the aorta. Consider patent ductus arteriosus next. I have seen only two cases of this condition. A machinery type murmur which continues through the cardiac cycle is heard in such a malady. This man did not have anything of that nature. There are, however, certain conditions that do fit the findings very well. A defect in the interventricular septum with or without pulmonic stenosis may cause signs which are identical with these. There are two facts which make a diagnosis of pulmonic stenosis unlikely. The record states that the pulmonic second sound is increased in intensity. In pulmonic stenosis, the second pulmonic should be decreased or absent. In addition, Dr. Kilby has told us that the pulmonary artery is enlarged.

According to Maude Abbott, a patient with pulmonary stenosis who lives to middle age usually has an associated interventricular septal defect, dextroposition of the aorta and hypertrophy of the right ventricle. This combination is known as the Tetralogy of Fallot. I think that the patient had an interventricular septal defect with transposition of the large vessels. I believe that if the heart and trachea are displaced to the left, atelectasis is probably present on that side. If he had fluid on the left, it would displace the heart and mediastinal contents to the right side. We see it displaced to the affected side. In my opinion, atelectasis exists in the lower portion of, if not throughout, the left lung. You can see that there is both fluid and air there. Whatever the lesion is, it must have extended into the pleural space to result in pneumothorax. I would consider tuberculosis as a complication, but Dr. Kilby allegedly knows that the mediastinal masses are not lymph nodes. A man of fifty-two years with a pulmonary mass deserves study to exclude bronchogenic carcinoma, but if the mediastinal shadows are not lymph nodes, lung carcinoma is dismissed a priori. One would like to make one diagnosis instead of two or three. This man certainly did have evidence of congestive failure. With the dilation of cardio-vascular structures in the mediastinum there might have been compression of the left primary bronchus and atelectasis. This is far-fetched to me. I conclude that this patient had congenital heart disease characterized by a defect in the interventricular septum and at least part of the syndrome known as the tetralogy of Fallot. He had congestive failure and atelectasis in at least the lower portion of the left lung and pleural effusion. How can one account for the hilar shadows in the roentgenograph of the right lung? I cannot imagine a hemorrhage looking like that nor have I any ideas explaining them. I think the principal lesions will be found in the cardio-vascular system.

Senior Student: I understand that one of the components of the tetralogy of Fallot is pulmonary stenosis, but in the discussion it was pointed out that the pulmonary artery was enlarged and there is an increased pulmonic sound.

Dr. Gundry: As I pointed out before, that is the great difficulty in diagnosing the tetralogy. The loud pulmonic second sound indicates an increased pressure in the pulmonary circulation and not a pulmonic stenosis. Unless the large vessels are transposed so that Dr. Kilby is actually looking at a widened aorta, the diagnosis of pulmonic stenosis is untenable.

Dr. Woodward: Could he have had a pulmonary thrombus on the left? Could the lesion on the right be congestion of the lung?

Dr. Kilby: If we had fluoroscoped the patient, and told Dr. Gundry, he probably would have no trouble in making the diagnosis.

Senior Student: Couldn't the lesion in the right lung be a hemorrhage with calcification?

Dr. Kilby: I don't think so. Each individual hilar mass is well circumscribed. I think that you see one that is rather long. Some of these were seen on end. If we had fluoroscoped the patient, we would have seen "hilar dance."

Senior Student: Dr. Helen Taussig showed us films of the Eisenmenger complex which had enlarged great vessels. I think you would have to rule out this complex. You would not have pulmonic stenosis but increased pressure in the pulmonary vessels.

Dr. Charles Shaw: How often is hydropneumothorax seen with so little density?

Dr. Kilby: I think this patient has hydropneumothorax because the density is not homogeneous below the apparent fluid level and the pleural fluid is encapsulated. The infiltration might be caused by a vascular engorgement.

Senior Student: Do you think that the area on the right side is a hemangioma?

Dr. Kilby: I don't know. It could be that or an arteriovenous aneurysm of the lung. Arteriovenous aneurysms with marked dilatation of the vessels present findings similar to the ones you see here.

Senior Student: Is that film compatible with congenital cystic disease of the lung?

Dr. Kilby: No. In this patient's roentgenograph you see multiple areas of increased density. If there were congenital cysts of the lung, you would see multiple cysts filled with fluid. I think that would be unlikely.

PATHOLOGIC DISCUSSION

ANATOMICAL DIAGNOSIS: Interventricular septal defect, heart; dilatation and hypertrophy, right ventricle; dilatation of the pulmonary artery; extensive thrombosis, pulmonary artery and branches; congestion of vessels, hydro thorax, left.

The body is that of a slender middle aged white male. The pupils are dilated. The conjunctivae, nasal and oral mucous membranes are cyanotic. The superficial veins of the neck are prominent and the neck and extremities are cyanotic.

On section the subcutaneous tissues are moist and deeply congested. The liver and other abdominal viscera show marked congestion. The lungs are partially expanded and held to the chest wall in several places by thin fibrous adhesions. The left pleural cavity contains about 200 ccs. of clear yellow fluid.

The transverse diameter of the heart is 14 cm., while that of the thorax is 24 cm. The heart weighs 640 grams. The subepicardial blood vessels are tortuous and prominent. The right ventricle is dilated and its wall hypertrophied. The right ventricle is much more prominent that the left. The wall of the right ventricle measures 20 mm. in thickness, while that of the left ventricle measures 21 mm. in thickness. The valves appear competent.

There is an oval defect in the interventricular septum which measures 3.5 cm. in diameter. The main pulmonary artery and its branches show advanced atherosclerotic changes. Beginning just beyond the bifurcation of the pulmonary artery, the main, subsidiary and smaller branches contain firm lamellated thrombi. The lungs are voluminous and boggy, and there is moderate emphysema. The spleen, liver and kidneys are congested. The aorta shows moderate atherosclerosis, most marked in the abdominal portion.

This is a case of congenital heart disease. The lesion is an interventricular septal defect. As would be expected the right ventricle is dilated and its wall is hypertrophied. The pulmonary artery shows dilatation with atherosclerotic changes. This case appears to be one of a simple interventricular septal defect. It differs from the classical Eisenmenger's Complex in that deviation of the origin of the aorta to the right is not demonstrated. It differs from the tetralogy of Fallot in the absence of pulmonary stenosis and deviation of the origin of the aorta to the right. The much discussed hilar shadows are explained on the basis of extensive pulmonary artery thrombosis.

OBSTETRICAL CASE REPORT*

This patient, Mrs. E. R., was first seen on July 28, at which time she was approximately 24 weeks pregnant. The pertinent facts about her history are as follows: Age 37, parity 3-0-0-3. Oldest child 12, youngest 4 years of age. There is a positive history of frequent sore throats and a possible history of rheumatic fever. Symptoms of cardiac disease appeared originally during her first pregnancy at which time she found that she tired easily and had a moderate amount of shortness of breath. The first three months of this pregnancy were spent in bed, and the remainder under limited activity. At the time of delivery she apparently underwent a rather acute cardiac decompensation. After recovery she was relatively symptom-free until the second pregnancy which followed closely upon the first.

Symptoms were not as severe this time, although she again decompensated at delivery. Since then she has never been symptom-free and has had to resort to digitalis upon several occasions. Her third pregnancy was seven years after the second. She was supervised closely throughout and although she decompensated at about three months, compensation was re-established and pregnancy continued to term. She was admitted to the hospital three weeks before the estimated date of confinement where digitalization and bed rest were continued except for lavatory privileges. Labor began spontaneously, proceeded uneventfully and terminated without any evidence of decompensation. Puerperium was normal and at the time of discharge (6 weeks) it was felt that her cardiac status had not been worsened by this pregnancy. Sterilization was offered at this time but was refused for religious reasons.

There ensued a period of four years before the fourth or present pregnancy. During this interval there had been a definite change in her cardiac condition. The heart was now definitely enlarged and electrocardiographic tracings showed evidence of "myocardial abnormality and weakness". She also had had several episodes of decompensation from which she was returned only after long and intensive treatment. Digitalis medication was now constant.

When this patient reported to the obstetrician on the above date (July 28th), she brought with her a note from a medical consultant dated two weeks earlier. This note recommended an immediate termination of pregnancy. If that could not be done because of religious convictions, then she should be given complete bed rest until viability. At this time induction of labor or a cesarean section should be performed. The note further stated that the prognosis was "very uncertain".

Question: Considered entirely from a medical view point, should this recommendation be followed?

DISCUSSION

It is quite evident from the above that this patient has a severe rheumatic heart disease, practically grade four. It is out common knowledge that the risk of pregnancy is greatly increased in the presence of heart disease, the maternal death rate being 30 times as great as the overall rate for pregnancy with all of its complications. Under these conditions it is freely admitted that the patient would have saved herself a certain risk of death in the next few months if she had not become pregnant. Also that a great deal of this risk could be avoided if the pregnancy could be terminated safely at this time. It is the word "safely" in this last sentence upon which the entire statement depends. Here cardiologists are in complete agreement with obstetricians who have a knowledge of the heart. They contend that, while pregnancy increases the risk to the cardiac, such a risk is much less than is that of terminating the pregnancy artificially. One exception to this may be where termination occurs very early in pregnancy, before the tenth or at the most, the twelfth week. After this an increasing load upon the heart takes place until the 34th week, when it begins to lessen moderately until term is reached. An artificial termination of pregnancy is more of a strain upon the heart than a spontaneous delivery. It is also common knowledge that vaginal delivery is much safer for the cardiac than is an abdominal procedure.

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* From the Department of Obstetrics, University of Maryland School of Medicine, Baltimore.

Therefore, entirely for medical reasons (and omitting for the time any religious aspects) it can definitely be stated that the best interests of the patient practically demand no interference with the pregnancy. She should be allowed to go to term and then into labor spontaneously. Delivery should be from below.

ACTUAL TREATMENT

The treatment was as outlined above. The patient had three periods of decompensation during pregnancy (two after the first consultation), and was in the hospital for 25 days before labor began. Delivery was easy. She did not decompensate, and showed considerable improvement during the six week postpartum period of observation. It is doubted that any future pregnancy would terminate as happily.

BOOK REVIEWS

Histology. *Arthur Worth Ham, M.B. Professor of Anatomy, in Charge of Histology, in the Faculties of Medicine and Dentistry, University of Toronto, Toronto, Canada. 1950, J. B. Lippincott Company, Price $10.00.*

This book has as its goal, the presentation of histology to the medical student, in a new and individualistic manner. There has been little or no attempt to save space, which accounts for the fact that it is a 750 page volume. On the other hand, no attempt has been made to present the fine print and footnote detail which has crept into textbooks of histology over a period of many years. Rather, it appears that the author has successfully presented the major material of histology in an interesting manner and correlated this with other subjects in the medical curriculum. This correlation of the subject matter of histology with that of as many other subjects as possible, and even with the practice of medicine itself, has as its primary purpose, to impress this on the mind of the reader, and at the same time provide the associations necessary for these impressions to be incorporated for longer retention.

The division of the text into four parts, and the allotment of space according to trends in interests, also seems logical. For instance, it is stated that the "great advances made in Endocrinology during the last two decades, justify much more space being devoted to endocrine glands and the reproductive system, then was necessary in the past." Part I of the book deals with the introduction to histology, and how it is studied. Part II takes up cytology, intercellular substances and fluids; part III, the primary tissues and their sub-divisions. Part IV deals with the histology of the various systems.

Without a doubt, the most outstanding feature of the book is the delightful and intelligent way in which histology has been correlated, not only with gross anatomy, physiology, and biochemistry, but also with current medical problems and medical knowledge in general. There is even the statement in the preface "that so far as may be accomplished in histology, an effort was made in this connection to lay the groundwork for students developing a psychosomatic point of view."

The illustrations occupy considerable space and have not been spared. There are over 140 drawings and over 400 new photographs, and most of these are abundantly and clearly labeled. The references at the end of each chapter have been carefully selected for possible student use. The index appears to be quite adequate and useful. There are several colored plates on blood and bone marrow and one on bone. More of these would be desirable but would doubtless increase the cost of the book.

This book will probably be adopted for many courses in histology in medical and dental schools as well as in colleges. The reviewer concurs in the idea expressed in the preface, that it may also be found useful to those graduates of medicine who feel the need for increasing their background knowledge in one or many fields in order to understand better, some of the recent advances and current medical problems.

Frank H. J. Figge

A Year with Osler—1896–1897: *Notes taken at his Clinics in the Johns Hopkins Hospital—by Joseph H Pratt, M.D. The Johns Hopkins Press, Baltimore, 1949, pp. 209.*

During the year 1896–1897, the author of this volume, then a junior medical student, carefully recorded the comments and discussions presented by Sir William Osler in the course of his teaching clinics. These constitute the basis of a book which is both historically interesting and valuable. Dr. Osler's method of presentation was such that almost verbatim recording was possible. The actual flavor of this extraordinary clinician's teaching is admirably captured. It is possible to observe here in their infancy the methods of clinical teaching which still prevail in medical schools. Certain items of information which are today commonplace are, of course, conspicuously absent. There is in abundant evidence the wide range of information, historical and curent, which were so apparent in Osler's writings. The impression is bolstered of the trained observer whose deductions, based upon careful history and meticulous examination, were amazingly accurate even without the aid of modern laboratory methods. The collection and analysis of groups of cases which was so important a part of Osler's textbook of medicine is exemplified in many of the clinic presentations. One is impressed again by the prominence of certain infectious diseases—typhoid, pneumonia, malaria—which formed so important a part of the teaching and practice of medicine a half century ago. The value of the book is increased by an interesting prefatory essay and small collection of photographs. This volume should be of value not only to those interested in Osler himself, but in the history of medical teaching during the past fifty years in the United States.

Milton S. Sacks, M.D.

MEDICAL SCHOOL SECTION

REPRINTS NO LONGER REQUIRED

The regulation requiring members of the Faculty of the School of Medicine to submit to the Dean's Office reprints of articles published in the name of the School of Medicine has been rescinded.

In order to acquaint other members of the Faculty with the current publications of the many departments comprising the Medical School, it has been suggested the authors contribute to the Medical Library reprints of their papers as they appear. The *Bulletin* is most anxious to publish from time to time lists of current publications by the staffs of the School and Hospital. In the past the medical librarians have compiled such lists. Since the Cumulative Index is often nearly two years behind in its indexing, it is unlikely that a cataloging of scientific papers by the Medical Library staff will ever be current.

The use of the Medical Library as a depository for current reprints will accomplish part of the task. During the coming year, the *Bulletin* will circularize all Department Heads requesting from them complete information concerning their respective departments. It is felt that if cooperation is forthcoming, the task of providing a periodic listing of current publications from the School of Medicine will be made much easier.

CATALOGUE CHANGES

Effective this year, the Catalogue of the School of Medicine will no longer appear as a number of the *Bulletin*. The Catalogue will now be mailed directly from the Dean's Office. Inquiries concerning non-receipt of this publication should therefore be directed to the Dean's Office.

OBSTETRIC INSTRUMENTS NEEDED

The School of Medicine of the University of Maryland is very desirous of making additions to its collection of old as well as recent obstetric books and instruments.

Contributions will be gratefully received and acknowledged by being appropriately labeled with the donor's name and displayed in a suitable exhibition case. All such materials should be sent to Dr. Louis H. Douglass, Professor of Obstetrics, University Hospital, Baltimore, 1, Md.

TO HEAD AMERICAN COLLEGE OF PHYSICIANS

Dr. Maurice C. Pincoffs, Professor of Medicine, was recently named President-elect of the American College of Physicians at the annual convention held in Boston, Massachusetts. Dr. Pincoffs will succeed Dr. William S. Shainline who is serving as President during the current year.

ADDRESSED NURSES

Dr. John C. Krantz, Jr., Professor of Pharmacology, University of Maryland School of Medicine, addressed the meeting of District #2, Maryland State Nurses'

Association on March 16, 1950. Dr. Krantz chose as his topic "New Drugs and How They Act".

ADDRESSES WEST VIRGINIA MEETING

Dr. Wetherbee Fort, Assistant Professor of Medicine was a guest of the Jefferson County West Virginia Medical Society at a dinner meeting held in Charlestown on May 24, 1950. Doctor Fort addressed the society on the topic, "Common Chest Conditions; Diagnosis and Treatment".

DELEGATE TO INTERNATIONAL CONGRESS

Dr. Frank H. J. Figge, Professor of Anatomy at the School of Medicine has been named delegate to the 5th International Cancer Congress to be held in Paris, July 15–23, 1950, and also delegate to the International Anatomic Meetings to be held at Oxford, England the following week. Dr. Figge will read scientific papers at both meetings.

DR. GORDON GIBBS, *Pediatrics*

DEPARTMENT OF PEDIATRICS

Dr. Gordon E. Gibbs has been appointed Associate Professor of Clinical Research in the Department of Pediatrics. Dr. Gibbs received his M.A., Ph.D. and M.D.

from the University of California. He was an Associate in the Department of Physiology at the University of California Hospital. In the past three years Dr. Gibbs has been on a senior fellowship in pediatrics at the National Research Council, spending his first two years at the University of California and his last year at the University of Illinois where he has been working with Dr. Ivy. Dr. Gibbs has published quite extensively. Some of his most noteworthy publications are "Quantative Drop Analysis—Determinations of Urea and Ammonia", published in MiKrochemic in 1934; "Lipid Metabolism in Experimental Pancreatic Diabetes", published in Endrocrinology in 1941; "Some Diagnostic and Therapeutic Techniques in Cystic Fibrosis of the Pancreas", published in California Medicine in 1948. Dr. Gibbs' interests have always been primarily in the metabolic field.

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The Pediatric Department and the University Hospital have been recipients of a grant from Federal funds allocated to the State Health Department to set up a seizure unit. The amount of this grant is $6,000 for the current fiscal year and thereafter to be maintained at $5,700 per annum. The pediatric seizure unit is to be under the direction of Dr. Ruth Baldwin.

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Dr. J. Edmund Bradley, Professor of Pediatrics, School of Medicine, University of Maryland addressed the Harriet Lane group on May 2, 1950. His subject was "Reversibility of Bronchiectasis".

DEPARTMENT OF SURGERY

Dr. F. Robert Haase, class of 1947, who completed his Residency in Ear, Nose and Throat at the University Hospital on June 30, 1950, will attend the Graduate School of Medicine at the University of Pennsylvania for eight months beginning October, 1950.

Dr. Rowell C. Cloninger, class of 1944, was appointed a Fellow in General Surgery at the Lahey Clinic, Boston, Massachusetts on July 1, 1950.

Dr. Charles W. Hawkins, class of 1946, has been appointed Instructor in Gross Anatomy at the University of Maryland at the completion of his Residency in Genito-Urinary Surgery at the University Hospital.

Dr. William Lynn has been appointed as a Fellow in the Department of Investigative Surgery at the University of Maryland beginning July, 1950 following completion of his Residency in General Surgery.

Dr. Richard D. Hoover will be an Assistant Resident in Surgery at the Hospital for Ruptured and Crippled in New York City at the completion of his Assistant Residency in Surgery at the University Hospital in July, 1950.

Dr. H. James Lambert, class of 1944, has accepted an Assistant Residency in Gynecology at the Presbyterian Hospital in New York City to begin in July, 1950 at the completion of his Assistant Residency in Surgery at the University Hospital.

Dr. James R. McNinch, class of 1945, has recently returned from an archaeologic expedition in South Arabia.

MEDICAL LIBRARY NOTES

The Medical Library continues to be impressed by the flow of books and journals to the book collection from generous and interested donors. In the past 3 months the following persons have presented material to the library:

Dr. Edwin K. Ballard
Dr. H. C. Byrd
Dr. E. R. Davies
Dr. Maurice Feldman
Hynson, Westcott and Dunning
Dr. A. M. Kraut
Dr. H. Whitman Newell
Dr. Maurice C. Pincoffs
Dr. John E. Savage
Dr. E. Roderick Shipley
Dr. Hugh R. Spencer

* * * *

During the recataloguing of John C. Hemmeter's DISEASES OF THE STOMACH, (Second Edition published by Blakiston in 1900), the following letter signed by William Osler* dropped from the volume. This personal note between two great physicians will be an interesting addition to the library's collection of historical material.

April 3rd, 1900.

Dear Hemmeter:*

What the deuce are you interfering with my practice for? Mrs. Gray's case should be one in which I would be *very much* interested. Should I see her I shall urge her to put her duodenum at least, under your care.

I have been looking over your second edition with the greatest pleasure. What a success you have made of it! I am glad that you have found Blakiston so satisfactory. There are one or two things I have noted that I will speak with you about later.

Sincerely yours,
(Signed) Wm. Osler

The following journals, which are not available through the usual sources, are needed by the library. If any alumnus or other friends of the library can supply these issues, they will be greatly appreciated.

American Journal of Physiology. Vol. 155, No. 3, December 1948
American Journal of Public Health. March 1943
American Medical Woman's Assn. Journal. Vol. 3, No. 8, August 1948
American Practitioner. Vol. 4, No. 1, September 1949
Archives of Pathology. Vol. 46, No. 5, November 1948
Biochemistry Journal. Vol. 41, No. 1, March 1947
Biological Abstracts. Vol. 2, No. 10, December 1946
Journal of Biological Chemistry. Vol. 178, No. 1, March 1949
Journal of Pathology & Bacteriology. Vol. 59, Nos. 1 and 2, 1947
Science. Vol. 109, July 2, 1948

* * * *

APPOINTED TO STAFF OF BULLETIN

The resignation of Dr. J. Edmund Bradley as Associate Editor of the Bulletin has been necessitated because of excessive Post-Graduate Committee duties. Dr. Bradley's position will be assumed by Dr. Howard M. Bubert.

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* *Ed. Note:* This probably represents a hitherto unpublished Osler Letter. At the time this letter was written, Dr. Hemmeter was Clinical Professor of Diseases of the Stomach and Director of the Clinical Laboratory at the School of Medicine.

Dr. Dexter L. Reimann, Associate Professor of Pathology, has been named Associate Editor of the Bulletin and will direct the composition of the Clinical Pathologic Conferences.

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APPOINTMENTS TO THE FACULTY

Dr. Robert E. Bauer who completed his Residency in Medicine at the University Hospital, Baltimore, on July 1, 1950 has been appointed Instructor in Medicine on the Faculty.

Dr. Stanley Durlacher, Assistant Medical Examiner for Maryland has been named to the Staff of the Department of Legal Medicine as Associate.

Drs. David B. Gray and **John M. Bloxom, Jr.** have been named National Cancer Institute trainees in the Department of Oncology.

Dr. Clarence W. Martin has been named Assistant in Obstetrics.

Dr. Albert M. Powell, Jr. has been appointed Fellow in Pediatrics.

Dr. Garrett E. Deane has also been named Fellow in Pediatrics.

Dr. Martin K. Gorton and **Dr. Joseph B. Workman** have been appointed Baltimore Rh Typing Laboratory Fellows in Medicine.

Dr. Sarah Cook has been appointed Assistant in Pediatrics.

Dr. Ruth Baldwin has been appointed Assistant in Pediatrics and Director of the Pediatric Seizure Clinic.

In the Department of Psychiatry, **Dr. Leah K. Dice** has been named Associate in Psychiatry.

Miss Marcella Weisman and **Mrs. Elizabeth Pembroke** have been named Assistants in Psychiatry while **Miss Phebe Rich** has been appointed Instructor in Psychiatry.

Dr. Louis O. J. Manganiello class of 1942, who completed his Residency in Neurosurgery at the University Hospital on July 1, 1950, is now associated with the Departments of Anatomy and Neurologic Surgery at the School of Medicine

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Changes in the Resident and Fellowship assignments of the Department of Neurologic Surgery effective as of July 1, 1950 are as follows:

Dr. Robert M. N. Crosby, class of 1943, from Research Fellow in Neurologic Surgery to Resident in Neurosurgery, University Hospital.

Dr. Jose Alvarez-DeChoudens, class of 1944, from Assistant Resident in Neurosurgery, University Hospital to Assistant Resident, Baltimore City Hospitals.

Dr. George W. Smith from Assistant Resident, Baltimore City Hospitals to Fellow in Neurosurgical Research, School of Medicine.

Dr. Roy B. Turner, class of 1944, from Fellow in Neuropathology to Assistant Resident in Neurosurgery, University Hospital.

Dr. James S. Browne, University of Rochester, class of 1948, who spent the past year as Intern at Baltimore City Hospitals, will join the Neurosurgical Staff as a Fellow and will be assigned to Neuropathology.

Dr. Pomeroy Nichols, class of 1946, will continue as Assistant Resident in Neurosurgery at the University Hospital.

Dr. John deCarlos, Jr. has been appointed Assistant Professor of Roentgenology.

Dr. Irvin B. Kemick has been appointed Assistant in Medicine.

Dr. Leon Kochman has been appointed Instructor in Medicine.

Drs. Joseph G. Bird and **Charles E. Shaw** have been named Assistants in Medicine.

PROMOTIONS

Dr. Charles P. Barnett, has been promoted to Associate in Pathology.

Dr. Donald E. Fisher has also been appointed Associate in Pathology.

Dr. Louis C. Gareis and **Dr. J. Huff Morrison** have been promoted from Assistant to Instructors in Obstetrics.

Dr. Harry McB. Beck has been named Assistant in Obstetrics.

Dr. William A. Dodd has been appointed Assistant in Obstetrics.

Dr. George H. Davis and **Dr. J. K. B. E. Seegar** have been promoted from Assistant to Instructors in Obstetrics.

In the Department of Medicine, **Dr. Edmund G. Beacham** has been promoted to Associate in Medicine.

Dr. C. Edward Leach has been promoted from Associate to Assistant Professor of Medicine.

Further promotions in the Department of Medicine include the following:

Dr. E. T. Lisansky and **Dr. Samuel T. R. Revell** from Associate to Assistant Professor; **Dr. Wilford H. Townshend** from Instructor to Associate in Medicine; **Dr. Alvin J. Hartz** and **Dr. James R. Karns** from Instructor to Associate in Medicine.

* * * *

RESIGNATION

Dr. Thomas K. Galvin has tendered his resignation as Clinical Professor of Gynecology in the School of Medicine.

POST GRADUATE COMMITTEE SECTION

POST GRADUATE COMMITTEE, SCHOOL OF MEDICINE

Howard M. Bubert, M.D., *Chairman and Director*

Sarah Cook, M.D.,
Assistant Director

Elizabeth Carroll,
Executive Secretary

Post Graduate Office: Room 600
29 South Greene Street
Baltimore 1, Maryland

In the April, 1950 issue of the Bulletin of the School of Medicine, announcement was made concerning the extramural courses which the Post Graduate Committee of the University of Maryland School of Medicine has presented to various county groups of physicians throughout the State of Maryland during the past two academic years. Those lectures which had been given during the current year were enumerated. Since the last issue of the Bulletin, the following lectures have been presented:

1. Renal Tumors, by Howard B. Mays, M.D.
2. Renal Infections, by W. Houston Toulson, M.Sc., M.D.
3. Drug Therapy of Renal Infections, by Charles W. Hawkins, M.D.
4. Antibiotics: Pharmacology, Toxicology, Range of Activity, and Dosage, by Theodore E. Woodward, M.D.
5. The Treatment of Rickettsial Infections, by Robert T. Parker, M.D.
6. The Treatment of Meningitis, by Fred R. McCrumb, M.D.
7. The Treatment of Gram-negative Infections, including Tularemia, Typhoid Fever and Brucellosis, by Robert E. Bauer, M.D.
8. The Treatment of Infections caused by Gram-positive Bacteria and other Miscellaneous Infections, by Theodore E. Woodward, M.D.
9. Psychosomatic Medicine in General Medical Practice, by Jacob E. Finesinger, M.D.

At the June meeting in Salisbury, Maryland the following lectures were presented:

1. Some Dermatologic Conditions of Local and Systemic Origin, by Harry M. Robinson, Sr., M.D.
2. The Present Day Conception in the Treatment of Syphilis.

The lecture series at Hagerstown was completed on April 4. A letter from Dr. Ernest F. Poole, Secretary of the Washington County Medical Society advised the Committee that the lectures were very well attended and that the enrolled physicians considered the series very much worth while.

BASIC SCIENCES AS THEY RELATE TO SPECIALTY TRAINING PROGRAMS

DIETRICH C. SMITH

Vice-Chairman, Post Graduate Committee

If medicine is to be practiced on something higher then the "cook book" level, an intelligent comprehension on the part of its followers of the biologic fundamentals involved is self evident. This elementary truth has gained wider and wider recognition in the profession during recent years. At the same time, the gap between acquiring mastery over the basic medical sciences of anatomy, physiology, pathology and their related disciplines grows constantly. The time is also extended when the virtually middle aged student finishes his hospital and speciality training and enters practice.

When the physican becomes aware that his training in basic sciences is necessarily incomplete, and that these sciences have advanced broadly since he was last exposed to them, there is little he can do about it. Hospital duties and the rigors of general practice being what they are, only the exceptional man has had the time and opportunity to read at all deeply in the basic sciences after he has left medical school. Only in the rarest cases, has he been able to go into the laboratory and check for himself the conclusions of others or to try to extend the frontiers of knowledge on his own. It is easy to understand why among this group there are certain doubts as to how much of this basic science training was understood in the first place and how much was retained in the second. Such doubts become more evident with the imminence of Specialty Board examinations.

The medical schools are not unaware of their responsibilities in this situation. In some, the problem has been met by having all men participating in hospital training programs rotate for six months or a year through a basic science department on a fellowship basis. Such a program is not possible at the University of Maryland, partly because funds for such fellowships are not presently available. There are, however, at least two other alternative solutions to the problem. A school can offer basic science lectures to hospital resident staffs without interruption of training. Such a series was inaugurated this year at the University of Maryland School of Medicine for the Department of Anaesthesiology. These lectures are to cover the fields of biochemistry, physiology and pharmacology, they are to be given biweekly over a period of two years. Second, a school can offer an integrated basic science course on a full-time postgraduate level to those men who are willing and/or able to suspend their practice or their hospital training program.

This last and more ambitious course has been inaugurated at the University of Maryland. In 1948, a course entitled **"Basic Sciences as they Apply to Obstetrics and Gynecology"** was offered. Much credit goes to the Department of Gynecology for advice and counsel during this planning period. The initial success of this cause led to its repetition in 1949–50 and it is expected to be given again in 1950–51. The course is full-time for twenty weeks and enrollment is limited to five. Applications well in excess of this number have insured to date, the selection of only well qualified students. Only men who at the time of application held or had held an assistant residency or its equivalent have been considered. The faculty consisted of members of the several Basic Science Departments who gave willingly of their time when heavily committed elsewhere. These men deserve only the highest praise for their efforts.

As organized, the course consists of a series of lectures on the fundamentals of biochemistry and pharmacology, with one-half day a week devoted to gynecologic pathology, a review of bacteriology with special reference to the female reproductive tract, a special dissection of the female pelvis, a review of embryology and a seminar on reproductive physiology. Seminars are also given in connection with biochemistry and the student thus is given ample opportunity to survey the literature in whatever phase of his subject particularly appeals to him. While emphasis is on basic sciences during this period and not on practical work, the student is given an opportunity to attend what clinical conferences he can without conflicting with his other work. In addition, each student is required to spend at least two days a week upon some special problem in any of the fields related to his specialty.

Assured by the success of the Basic Science course in Obstetrics and Gynecology, the Committee felt justified in planning for 1951 a similar course for pediatricians on request of the Department of Pediatrics. This course will follow a pattern similar to the other, with emphasis upon the relations of basic science to pediatrics. Included will be a course on fetal and infant anatomy and a seminar on growth and development. Because of serious spatial limitations, the course will be restricted to not more than four or five men.

Regrettable as it may be, no further expansion in basic science training can take place without further adjustments by the School of Medicine. The teaching loads of the several departments concerned have reached their ceilings. Additional students cannot be accommodated in the present limited space, even if instruction were available. If basic science training, of the type described, is desirable at Maryland, thought should be given to: (1) establishment of basic science fellowships which will enable the student to devote full-time for an extended period to some field related to his specialty interests; (2) increasing the faculty of the basic science departments, possibly by adding to their staffs, trained young clinicians on a part time basis who could aid in this teaching program; and, (3) the assignment of definite laboratory space for such teaching where experimental work could be undertaken without encroaching upon the already overcrowded facilities of the departments concerned.

ALUMNI ASSOCIATION SECTION

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Representatives, Editorial Board, Bulletin

Harry C. Hull, M.D.
Albert E. Goldstein, M.D.
Wm. H. Triplett, M.D. (ex-officio)

Alumni Council

Louis H. Douglass, M.D.
Lewis P. Gundry, M.D.

The names listed above are officers for the term beginning July 1, 1949 and ending June 30, 1950.

PRESIDENT'S LETTER

After a most interesting year in office, I step down and in so doing carry with me many pleasant memories. I am not unmindful of the debt of gratitude I owe to so many who have been helpful in making the job an agreeable one. I urge that my successor be given the same loyal support to the end that we may continue to grow in usefulness.

I have come to the conclusion that our opportunities for service reach beyond the walls of our school and the roster of our membership. With that thought in mind there appeared on this page in the last issue of the *Bulletin* a suggestion that our Association sponsor one of the programs developed and directed by the Post Graduate Committee. I hope soon to see that project taking form and actually getting under way.

In vacating the office of president I want to leave another suggestion which I believe has great possibilities for service if properly developed, heartily supported, and carefully administered. I am anxious that every alumnus, and especially every member of the Alumni Association, become familiar with the Affiliation Program now contemplated by the School of Medicine.

Inquiry and investigation suggest that it has far reaching possibilities. We have scattered over the state of Maryland several hospitals, some in urban centers, others more remotely situated, and all of them doing a creditable type of work while laboring under the many handicaps incident to their organization and management.

We must not lose sight of the fact that we represent one of the schools making up a great state University, an institution supported by the taxpayer. We, therefore, have an obligation which goes far beyond conducting a school of medicine. We must not only keep in the vanguard of higher medical education but also use our influence to spread its benefits over the entire state. What better medium could be devised than the Affiliation Program?

This program contemplates an exchange of personnel—nurses, internes, assistant residents and residents—initially representing the services of but not limited to medicine, surgery and pediatrics. Under the plan this personnel flows to affiliate hospitals over the state on an exchange basis. The hospital in Salisbury, Maryland has already qualified for affiliation and is now sharing in the benefits of this program. Doubtless other hospitals will apply and some will be immediately accepted while others will be required to meet approved specifications to be considered for inclusion in the program.

As I see it, this program has tremendous possibilities. It promises to broaden the veiwpoint of every one privileged to share in it. It will greatly diversify the type and increase the scope of training. The services in every hospital involved will be greatly improved and the end result will be better trained doctors and nurses, better hospital services and a better understanding between doctor and patient. There is a crying need today for good family doctors; men well trained, well equipped and competent but also steeped in the tradition of our forbears in their relationships with the public.

Here is an opportunity for service not only to our school but also to our profession and our citizenry. Get behind the Affiliation Program and support it to full fruition.

William H. Triplett, M.D.,
President.

NEW ENGLAND ALUMNI MEET IN BOSTON

Twenty eight New England alumni met for their annual luncheon meeting in Boston on May 17 at the University Club. Dr. W. Houston Toulson, class of 1913, Professor of Genito-Urinary Surgery at the University of Maryland School of Medicine was the guest speaker. The secretary-treasurer of the group, Dr. Charles E. Gill, class of 1927, of Pittsfield, Massachusetts, reported that alumni in the 6 New England states now numbered close to 350, including 150 from the Baltimore Medical College and 100 each from the College of Physicians and Surgeons and the University of Maryland School of Medicine. The passing of ten alumni since the 1949 meeting was noted. Dr. Gill reported that a larger turn-out of recent graduates should be possible next year with the revision of the alumni mailing lists following the appearance of the 1950 edition of the American Medical Directory. In keeping with past custom, the 1950 meeting was held on the second day of the three-day annual meeting of the Massachusetts Medical Society at the Hotel Statler in Boston. The 1951 meeting will be held in Boston with the 170th annual meeting of the Massachusetts Medical Society in May.

The following alumni were present at the annual meeting at the University Club.

UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE

Louis H. Limauro, class of 1906, Lynn, Mass.

Arthur H. Riodan, class of 1915, Springfield, Mass.

Charles E. Gill, class of 1927, Pittsfield, Mass.

A. C. Leavitt, class of 1934, Everett. Mass.

W. J. Dillon, class of 1916, Springfield, Mass.

Lucien H. Chaput, class of 1916, Haverhill, Mass.

Joseph P. Ponte, class of 1920, New Bedford, Mass.

Francis A. Reynolds, class of 1921, Athol, Mass.

Morris J. Nicholson, class of 1936, West Newton, Mass.

Edwin R. Ruzicka, class of 1939, Needham, Mass.

R. Louis Sapareto, class of 1943, Haverhill, Mass.

BALTIMORE MEDICAL COLLEGE

David G. Underwood, class of 1894, Hingham, Mass.

Robert C. Gwin, class of 1895, Brookline, Mass.

Richard H. Morris, class of 1896, Everett, Mass.

P. A. S. Grady, class of 1897, Clinton, Mass.

Charles McGinley, class of 1904, Lynn, Mass.

Harvey A. Kelley, class of 1906, Winthrop, Mass.

Edward F. Briggs, class of 1906, Truro, Mass.

E. M. Looney, class of 1909, Salem, Mass.

COLLEGE OF PHYSICIANS AND SURGEONS

A. C. Lewis, class of 1893, Fall River, Mass.

Archibald St. George, class of 1895, Fall River, Mass.

John H. Kearney, class of 1898, Fitchburg, Mass.

Sidney M. Saltz, class of 1904, Boston, Mass.

M. J. Griffin, class of 1907, Fall River, Mass.

Maurice S. Eisner, class of 1912, Pittsfield, Mass.

Charles W. Finnerty, class of 1913, Somerville, Mass.

Robert B. Garland, class of 1913, Hartford, Conn.

Raymond J. Quinn, class of 1913, Waterbury, Conn.

SUBSCRIBE TO "*MARYLAND*"

"Maryland", the official magazine of the General Alumni Association has been rated among the finest alumni publications now current in the United States. You will find "Maryland" an interesting and inclusive magazine, not only for its wide coverage of alumni news but also for its abundance of interesting items about the University as a whole.

Subscribe now. Subscription is $3.00 per year, payable to the Alumni Association, University of Maryland, College Park, Maryland.

ITEMS

Dr. Martin K. Gorton, class of 1949, has been recently appointed Fellow in Medicine at the University of Maryland and will pursue a research program in cooperation with the Baltimore Rh Typing Laboratory which is the co-sponsor of the Fellowship.

Dr. Daniel Hope, Jr., class of 1940, has moved to Union City, Iowa, where he will practice general surgery.

James A. Cline, III, class of 1949, has been appointed Lieutenant in the Medical Corps of the United States Air Force and will report for active duty July 1, 1950.

Dr. Isaac C. Wright, class of 1944, has entered the practice of internal medicine and has opened his office at 707 W. Morgan Street, Raleigh, North Carolina.

DELEGATES TO AMERICAN ACADEMY OF GENERAL PRACTICE

The following have been named delegates of the Maryland Chapter of the American Academy of General Practice: Drs. Charles F. O'Donnell, class of 1944, Towson, Maryland and Walter H. Shealy, class of 1923, Sharpsburg, Maryland.

Dr. Luis Guzman-Lopez, class of 1940, who recently completed his residency in neurologic surgery at the Neurologic Institute, Presbyterian Hospital, New York City, has returned to practice in Puerto Rico. He is now establishing a neurosurgical service in the district hospitals throughout the island.

Dr. Guzman has joined the Faculty of the University of Puerto Rico, School of Medicine and will be associated with the Department of Anatomy, Division of Neuroanatomy.

CORRESPONDENCE

February 23, 1950.

We feel that it will interest you to know that after your journal has been read by our Managing Editor, Mr. T. Arthur Turner and our Supervising Editor, H. Worsley Kendell, M.D. and members of his staff at Illinois Research Hospitals that our copies are being put to a very good use.

They are being passed on to students in medicine; some being shipped to the Philippine Islands, where there seems to be a great shortage of good medical literature as represented by your journal.

Much time and effort are put into the publication of your informative journal and it must be encouraging to know that copies are not shelved but live a full life of service furthering medical education.

Sincerely yours,
Frank M. Kraman, President
Physicians' Record Company
161 W. Harrison St.
Chicago 5, Ill.

* * * *

March 15, 1950.

Since graduating, I haven't been much of a writer except for prescription work.

The January issue of the Bulletin of the School of Medicine compels me to write this letter.

The Editorial Board is to be congratulated for dressing up the Bulletin. At least it has turned into a very pleasant eye-catcher. Of course, it is the material between the covers which "makes" the journal, but even doctors are human and appreciate a magazine that is appealing to the eye. The semi-gloss paper brings the point out much better and I can assure you that the Bulletin will be preserved with more enthusiasm in the future than it was in the past. Again, congratulations!

I am enclosing my check for membership. Bill me regularly.

Sincerely,
Charles Zurawski, Class of 1930
11 Matson Ave.
Providence 9, R. I.

* * * *

Today I received the Alumni certificate of the Association testifying to the half century that has passed since receiving my diploma from the University in 1895.

I want to assure you of my sincere appreciation of this certificate and the handsome manner it has been executed. I am proud to have it and it will be suitably framed and hung prominently.

Fifty years is a long time and there are but few of my class now living—in fact Dr. L. E. Cockrell is all of which I have knowledge. He is now practicing in Reedville, Virginia.

I have great admiration for the old school and happy to see that it has kept up with the advance of medicine and surgery.

Wishing all success for the Association and again thanking you for the certificate, I am

Fraternally yours,
John McMullen, M.D., F.A.C.S.
Medical Director, US PHS (Ret.)
5250 Watson Street, N.W.
Washington, D.C.

"LOST" ALUMNI

In an effort to keep the Alumni Association mailing list current, the *Bulletin* will publish physicians names by classes where the address of the alumnus is unknown to the Medical Alumni Association. Those who might read the list and who know of the address of any alumnus mentioned therein, would perform a great service by transmitting the address to the Medical Alumni Association, University of Maryland, Lombard and Greene Streets, Baltimore 1, Maryland.

The addresses of the following members of the class of 1948 are unknown.

Class of 1948

George M. Allison
David H. Beyer
Donald B. Bond
Eugene L. Bronstein
John S. Bullock
Matt H. Bulluck
Robert Chamovitz
Alice Chelton
James F. Condron
Harold J. Crecraft
James B. Dalton, Jr.
Raymond J. Dempsey
James W. Green
George V. Hamrick
Florence K. Hoback
Richard L. Hobart, Jr.
Raymond H. Kaufman, Jr.
Carl H. Kennedy, Jr.
Stephen Leograndis
Charles H. Lithgow
Burton V. Matthews
Ronald D. Matthews
Elisabeth McCauley
Guy D. Niswander
Paul V. Nolan
Phyllis Ann Peterson
Julian J. Platt
Joseph S. Redding
Jimmie Lee Rhyne
Edsel A. Rodriguez
Robert L. Rudolph
William A. Snyder
Robert R. Stahl
Norman Tarr
Allen D. Tate Jr.
William G. Thuss, Jr.
Hezekiah G. Walters, Jr.
Charles I. Ware
Roger S. Waterman
James T. Welborn
Clark A. Whitehorn
John D. Wilson

ALUMNUS COMMENDED FOR 33 YEARS SERVICE

Colonel Bascom L. Wilson, M.C., USAF, class of 1915, Greenville, North Carolina, has been commended by Major General Harry G. Armstrong, Surgeon General of the U. S. Air Force Medical Service, for an outstanding record during thirty-three years of military service.

Colonel Wilson was graduated from the University of Maryland School of Medicine and entered active military duty in 1916, as a first lieutenant in the Medical Corps, AUS. During World War I Colonel Wilson served in France and Germany as surgeon with the 11th Machine Gun Battalion. Following the Armistice he was commissioned in the Medical Corps, U. S. Army. He graduated from the School of Aviation Medicine, Randolph Air Force Base, Texas in 1932 and was qualified as a flight surgeon. He then served as Air Force Surgeon with the 5th Air Force at Brisbane, Australia during World War II.

Colonel Wilson retired December 31, 1949, but has returned to active duty in the office of the Surgeon General, USAF Medical Service. He was formerly Medical Advisor to the Air Inspector, United States Air Force.

General Armstrong, in his letter of commendation to Colonel Wilson, said that the medical officer's entire career has been distinguished both by a high degree of professional excellence and by an outstanding record of administrative leadership.

Colonel Wilson and Mrs. Wilson (Kathleen Lancaster Wilson) have a daughter, Mary Jane, a student at Stevens College, Columbia, Missouri.

ITEMS

Dr. Hiram E. Upton, class of 1927 of Burlington, Vermont was elected president of the Vermont State Medical Society at the annual meeting held in Burlington in September last.

Dr. Charles E. Gill, class of 1927 of Pittsfield, Massachusetts was elected to membership in the American Board of Preventive Medicine and Public Health in October, 1949. The new Board is the 17th specialty board to be approved by the American Medical Association and was founded in 1948. Its members must be graduates of approved medical schools and of graduate schools of public health and have ten or more years of full-time public health background in administration, teaching, or research. Dr. Gill is a native of Delaware and has been associated with the Massachusetts Department of Public Health since 1932. He had his graduate work at the Harvard School of Public Health in 1936–1937 and is a World War II veteran with four years of domestic and foreign service in the Army Medical Corps. He is one of 300 founder members certified by the Board without formal examination.

Dr. John Z. Bowers, class of 1938, formerly special assistant and chief of the medical branch, Division of Biology and Medicine, Atomic Energy Commission, has been appointed Dean of Medicine at the University of Utah College of Medicine, effective November 1, 1950.

Dr. Bowers, who has worked with the Atomic Energy Commission since 1947, is now stationed at Berkeley, California.

Drs. Alberta and Harry Mattax, class of 1949 will enter practice on July 1, 1950 at Crisfield, Md.

Dr. Richard W. Worthington, class of 1938, Commander, M.C., U.S.N. after seven years in Aviation Medicine, spent two years in the field of general surgery. At present Commander Worthington is stationed at the U. S. Naval Hospital, Annapolis, Md.

Dr. Christopher C. Shaw, class of 1931, Captain, M.C., U.S.N., now heads the Research Division, Bureau of Medicine, Navy Department. Dr. Shaw has also served as Educational Director, American College of Physicians. He is a diplomate in the American Board of Internal Medicine.

Dr. Lorman L. Levinson, class of 1941, formerly of the Department of Obstetrics of the University of Maryland has moved to Washington, D. C. where he will practice obstetrics and gynecology.

Dr. George H. Davis, class of 1936, has associated himself on a part time basis with the Baltimore City Health Department, division of Maternal and Child Welfare. Dr. Davis' duties include those which were formerly under the supervision of the late Dr. Alexander Novey.

Dr. Stuart G. Coughlan, class of 1937, has resigned from the surgical department of the School of Medicine and has become associated with Dr. Samuel Garst, in Staunton, Va., where he will practice general surgery.

Dr. E. Roderick Shipley, class of 1942, has been appointed Surgeon-in-Charge of Ward Teaching for the Senior Class. Dr. Shipley replaces Dr. Stuart Coughlan whose resignation from the Department of Surgery was recently announced.

Dr. C. Martin Rhode, class of 1940, is now resident in surgery, U. S. Veterans Administration Hospital, Perry Point, Md.

Dr. Joseph B. Workman, class of 1946, who is currently serving in the U. S. Air Force Medical Corps and who formerly was Assistant Resident in Medicine at the University Hospital, has been appointed Baltimore Rh Laboratory Fellow in Medicine beginning July 1, 1950.

Recent certifications by the American Board of Surgery following examinations given in November, 1949 include the following University of Maryland Alumni.

Dr. William L. Byerly
Dr. William Fisher
Dr. Edwin O. Daue, Jr.
Dr. Robert P. Sheppard
Dr. Edwin H. Stewart, Jr.

Dr. William H. Triplett, class of 1911, B.M.C., was elected President of the Association of Military Surgeons at the Convention held in Washington, D. C. in November, 1949.

Dr. Howard M. Kemp, Greenfield, Massachusetts, Class of 1911, B.M.C. paid a visit to the Alumni Headquarters in Baltimore while en route to his home from a visit to Florida.

Dr. Erland H. Hedrick, class of 1917, is now serving his third term in Congress as Representative from the Sixth Congressional District of West Virginia.

Dr. I. Phillips Frohman, Class of 1937 has recently been elected President of the District of Columbia Chapter of the American Academy of General Practice. Doctor Frohman recently contributed the paper "A Simple Method for the Management of Scalp Wounds," published in the December, 1949 issue of the Medical Annals of the District of Columbia (Vol. 18, No. 12). This paper describes the author's methods and experience in the management of over 350 minor scalp wounds, seen in a large general practice.

Dr. William C. Duffy, class of 1940, has moved his office to 1120 St. Paul Street, Baltimore 2, Maryland.

Dr. Henry A. Briele, class of 1939, has recently been elected President of the Wicomico County (Maryland) Medical Society. Dr. Briele is a resident of Salisbury, Maryland where he is engaged in the practice of surgery.

Dr. Morton L. Levin, class of 1930, Albany, N. Y., assistant commissioner for medical services of the New York State Department of Health, has been appointed director of the Commission on Chronic Illness. Dr. Levin has been granted leave of absence from his present post. Announcement of the appointment, effective January 1, 1950, was made by Leonard W. Mayo of New York, chairman of the commission, the office of which will be located at the headquarters of the American Medical Association in Chicago. The commission, originating under the sponsorship of the American Medical Association, the American Public Health Association, the American Hospital Association and the American Public Welfare Association, includes representatives of industry, labor, agriculture, education and other public interest groups, as well as those of the four sponsoring organizations.

In announcing the appointment, Mr. Mayo pointed out that Dr. Levin's training and experience in public health research and administration and in the special field of chronic illness particularly qualify him for directing the commission's work. He is a graduate of the University of Maryland School of Medicine and Johns Hopkins University and was instructor in epidemiology at the latter institution in 1934–35. He also has served as medical director of the New York State Health Preparedness Commission and is associate research director of the New York State Cancer Commission.

Dr. Frank Ayd, Jr., class of 1945, currently a member of the Staff of the Veterans Administration Hospital, Perry Point, Md., has been enrolled as a post-graduate student in Neuropathology.

OBITUARIES

DR. HARRY FRIEDENWALD

1864–1950*

Dr. Harry Friedenwald, an eminent Alumnus, successful in medical, religious, literary and civic activities died on April 8, 1950. How pleasant it would be if one could describe in detail the growth of his influence in matters local, state wide, national and international.

DR. HARRY FRIEDENWALD

Dr. Friedenwald was born September 21st, 1864, the oldest of 5 brothers, three of whom studied medicine and made outstanding records. He was graduated by the Baltimore City College in 1879, received an A.B. at the Johns Hopkins University in 1884, and his M.D. in 1886 at the College of Physicians and Surgeons in Baltimore of which his father was one of the founders. He studied abroad for 3 years, mostly in Berlin under the famous Professor Julius Hirshberg in whose clinic he became Chief Assistant. He also studied under the great Otologist, Politzer, in

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* Doctor Friedenwald died on April 8, 1950. For additional details See the Baltimore Sun, that date and April 9, 1950.

Vienna for about 6 months. He returned to Baltimore in 1890 and in 1892 married Miss Bertha Stein.

Before the opening of the Johns Hopkins Medical School and, with his usual appreciation of the finer things, he recognized the worth of Dr. William H. Welch and took a course in Pathology under him. There followed a life-long friendship between these two and with many other distinguished men in all professions and activities, local and afar. Associations with the great, however, never lessened his efforts to help the less fortunate. To aid the downtrodden was one of his greatest aims in life.

Dr. Friedenwald was Associate Professor of Ophthalmology and Otology at the College of Physicians and Surgeons from 1894 to 1902 and Professor from 1902 to 1929.[1] Upon the death of his father, Dr. Aaron Friedenwald in 1903, Dr. Friedenwald took on responsibilities and leadership in the Baltimore Jewish Community. His talents were promptly recognized and from 1905 to 1914 he was President of the Zionist Organization of America and Honorary President until his death. Early in his life he became an earnest bibliophile and this lead to the gradual collection of one of the World's finest private libraries on Judaica, later presented to the Hebrew University in Jerusalem. It also resulted in the writing of important contributions on allied subjects. These activities in other fields, however, did not prevent a large amount of strictly professional writing in his early and middle years. The writer of this notice first heard him lecture in 1905, three years after he became full Professor in the College of Physicians and Surgeons. He was then 41 years of age and a very impressive figure.

Most of the teaching in those days was didactic and, while everyone agrees that the more intimate clinical methods of today are better, there was a glamor in the full amphitheater and the well prepared lecture. The graduates of the College of Physicians and Surgeons cannot fail to remember and be impressed by the lectures of the able faculty of which Dr. Friedenwald was an outstanding member. To shine in a group that included Latimer, Preston, Chambers, Trimble, Lockwood, Gamble, Dobbin, Stokes, Harrison, the young Ruhrah, and others, was evidence of gifts beyond the ordinary. To those who knew Dr. Harry Friedenwald in the heyday of his numerous activities, there is no need to attempt a portrayal of his personality. To the younger men, who missed those years or missed knowing him altogether, it may be worthwhile inadequately to attempt a description of the impression he made on students, house officers and professional colleagues—groups who are keen in their estimates and difficult to deceive. There was no debate here; no discounting the ability, character, scholarship and kindness of this man nor his gifts as a teacher. The lecture room was all stillness and attention when he began to speak. One readily gathered he was master of his subject and master of the manner of presenting it. With these foundations, to have the lecture given in precise diction and a most melodic voice, with penetrating glances upon first one and then another of the class, with a forefinger pointing at him, was most impressive and not easily forgotten. Nor are his appearances at the various medical societies and clubs of which he was a member, particularly the old Medical Journal Club which afterwards became the Osler Society. After Dr. Osler left Baltimore, Dr. Friedenwald was a moving spirit in this organization for many years. Nothing gave him more pleasure throughout the winter season than to invite, different groups of 25 or 30 of his medical friends to meet at his home, 1212 Eutaw Place, to see and hear explained the latest additions to his library of Jewish medical history and lore, many volumes of which were bound or rebound by his own hands.

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[1] Other appointments and honors included Ophthalmic Surgeon to the Baltimore Eye, Ear and Throat Charity Hospital and Mercy, Sinai, Union Memorial and Woman's Hospitals. Dir. Jewish Theological Seminary America; gov. Dropsie Coll., Phila., Fellow A.A.A.S., Am. Col. Surgeons; member A.M.A., Am. Ophthal. Soc. (Pres., 1936–37), Am. Otol. Soc., Ophthal. Congress of Oxford, Ophthal. Soc. of the United Kingdom, Med. and Chir. Faculty of Md., Phi Beta Kappa. For further data see Who's Who—1950–51.

It is, of course, impossible to estimate the sorrow suffered by this high minded, gentle man, during the mad years of Jewish persecution. However, he stood these crushing sorrows as one would expect of a man of his character, and grew old gracefully and graciously. He must have obtained some satisfaction at seeing his hard labors in the interest of Zionism finally bear fruit. Let us hope that he did.

I cannot refrain from supplementing my admiration for this unusual person by quoting the fine tribute adoped as a minute by the Council of the Medical and Chirurgical Faculty on April 24th, 1950, written by one scholarly doctor about another. These are the words of Charles R. Austrian:

> "On April 8th, 1950, the death of Doctor Harry Friedenwald made not only this community, but the world of culture the poorer. Born in Baltimore on September 21st, 1864, the son of Doctor Aaron Friedenwald, who many of us remember as a valued and generous member of this Faculty, he took his place early among the leaders of his profession. Reared in an educated environment, his interest in the humanities was maintained at the Johns Hopkins University, and his postraduate training in ophthalmology abroad, that made him a master of his specialty, was not permitted to narrow his interests or to lessen his scholarly excursions into nonmedical fields.
>
> Learned in the lore of his religion, he accepted whole-heartedly the saying that "Out of Zion shall go forth the law and the word of the Lord from Jerusalem" and he became one of the earliest and most constructive Zionists, who helped greatly to further their cause.
>
> An outstanding Ophthalmologist, a rounded scholar, a capable author, an unexcelled toastmaster, a courageous sponsor of causes that he sought to advance, a constructive citizen, a genial, generous gentleman, the sire of a worthy follower in his calling, his passing is an irreparable loss. We are grateful to have shared life with him during his many useful years.

It is hoped that this crude charcoal sketch with the accompanying lovely miniature by Dr. Austrian may stimulate the production of a full sized portrait in appropriate colors, which to be true must be rich. If, in this insufficient tribute to one who was honored and revered by so many, there is detected a tendency toward superlatives, and if it is concluded that some of them came from a former student, and that an early glamorization may have continued through the years—then let it be remembered that those well chosen and true pigments in the miniature were placed there by no such influence, but by one who stands in aloof, calm judgment on many matters. And it may relevantly be asked—"What are superlatives for if not to be used in describing a man like Dr. Harry Friedenwald?"

WALTER D. WISE, M.D.

DR. JORGE DEL TORO

Dr. Jorge del Toro, class of 1906, a resident of Puerto Rico, died on February 19, 1950.

A noted surgeon, he was one of the pioneers in his field in Puerto Rico. Active throughout his entire professional career in civic affairs, he was past president of the Puerto Rico Medical Association and one of his community's leading citizens.

DR. FRANK M. WILSON

Dr. Frank M. Wilson, class of 1914, died at the Memorial Hospital, Cumberland, Maryland, on February 23, 1950, aged 59.

A surgeon and one of Cumberland's prominent physicians, Dr. Wilson was born in Cumberland on November 7, 1890, the son of the late Dr. J. Jones Wilson. His grandfather was Dr. William H. McCormick under whom his father conducted his preceptorship. After receiving his early education in the public schools, Dr. Wilson enrolled at the University of Virginia and in 1910 entered the School of Medicine at the University of Maryland. After his graduation, he served a clinical assistantship at the University Hospital, Baltimore which was followed by an additional year under the late Dr. George W. Crile in Cleveland, Ohio.

During World War I he served for 13 months overseas with the 77th Division, most of the time being spent in front line service. Wounded in action, he was honorably discharged as a captain and retired to Cumberland to resume his practice.

Dr. Wilson was founder of the local chapter of the American Cancer Society and a member of the Allegany-Garrett Medical Society, the Medical and Chirurgical Faculty of Maryland, the International College of Physicians and Surgeons and was a Fellow of the American College of Surgeons.

DR. BERNARD S. FRENCH

Dr. Bernard S. French, class of 1903, died in Baltimore, Maryland on March 12, 1950, aged 69.

Dr. French who practiced in Baltimore for nearly fifty years, specialized in Eye, Ear, Nose and Throat and was on the staffs of the West Baltimore General Hospital, Franklin Square Hospital and the Presbyterian Eye, Ear and Throat Hospital.

DR. CHARLES W. PRITCHETT

Dr. Charles W. Pritchett, P & S, class of 1886, of Danville, Virginia, died on January 26, 1950, aged 85.

Dr. Pritchett, the Dean of the Danville physicians, was born at Mount Cross, Pittsylvania County, Virginia on July 1, 1864. After attending Richmond College, he received his medical degree from the College of Physicians and Surgeons, Baltimore in 1886. A year later he entered practice at Keeling, Virginia and in 1900 came to Danville.

He was an ex-president of the Danville Academy of Medicine and at one time a vice-president of the Medical Society of Virginia. He was a member of the Board of the Danville Memorial Hospital.

Dr. Pritchett is survived by his wife, the former Mrs. Evelyn Hillsman and a son, Dr. Charles Bernard Pritchett of Danville.

DR. M. BOWMAN HOOD

Dr. M. Bowman Hood, class of 1900, died at his home in Baltimore on May 14, 1950. Dr. Hood was born in Baltimore on September 1, 1877 the son of Dr. John Hood and Henrietta Clary Hood of Carroll County, Maryland.

Dr. Hood's entire life centered around the practice of medicine in Central and West Baltimore, his first office being located in the 700 block of Dolphin Street.

Long active in fraternal affairs, he was a Second Degree Mason, a Knight Templar and a member of the Shrine. He was a co-founder and charter member of the Baltimore Medical and Surgical Club.

DR. J. FRANK CROUCH

Dr. J. Frank Crouch, class of 1890, Professor of Ophthalmology emeritus at the University of Maryland School of Medicine, died at his home in Baltimore on April 20, 1950, aged 84. A native Baltimorean, Dr. Crouch was one of the oldest living members of the Medical and Chirurgical Faculty of Maryland.

After his graduation from the University of Maryland, he attended post-graduate classes at the University of Berlin following which he entered the practice of ophthalmology and served on the staffs of the Presbyterian Eye, Ear and Throat Hospital and the Baltimore Eye, Ear and Throat Hospital.

He became Clinical Professor of Ophthalmology at the University of Maryland, retiring from this position in 1914.

Dr. Crouch was active in charitable work and for his many contributions to the benevolent activities of the Catholic Church he was made Commander of the Knights of St. Gregory.

DR. JOHN PETERSON YOUNG

Dr. John Peterson Young, B.M.C., class of 1894, died at his home in Empire, Ohio, on April 8, 1950, aged 90. As a young man he taught school at Sugar Grove, Ohio and while there became interested in medicine, completing his studies at the Baltimore Medical College. He then returned to Empire and practiced there continuously for more than 50 years, serving as Health Commissioner from 1919 until his retirement in 1940.

Born on November 9, 1859 at Turkey Foot, West Virginia, he was the son of the late William and Lucinda Peterson Young. In 1896 he was married to Ida Withroe. He is survived by two sons, Dr. John W. Young of Steubenville, Ohio, a dermatologist, and William Young, an attorney also of Steubenville.

DR. FRANK LUTHER McNEER

Dr. Frank Luther McNeer, of Hinton, West Virginia, class of 1911, B.M.C., died on October 24, 1949 at the age of 62.

Born in Marie, West Virginia, he received his early education in the public schools of Summers County. Following his graduation from the Baltimore Medical College in 1911, he began the practice of medicine in Green Sulphur Springs, West Virginia. Subsequently he practiced at Forest Hill and in Hinton and then located at Roanoke, Virginia where he practiced his specialty of Eye, Ear, Nose and Throat until 1932, when he returned to Hinton. He remained in active practice there until his forced retirement several weeks prior to his death.

DR. WILLIAM A. CAMPBELL

Dr. William A. Campbell, of Belington, West Virginia, class of 1895, B.M.C., died on August 20, 1949 at the age of 85.

Following his graduation, Dr. Campbell engaged in general practice at Belington, in which he was active almost until the time of his death.

DR. HAROLD E. WRIGHT

Dr. Harold E. Wright, of Baltimore, Maryland, class of 1919, died on January 16, 1950 at the age of 54.

He attended the New York University and the University of Maryland, specializing in radiology.

DR. SAMUEL MAXWELL SEAFUSE

Dr. Samuel Maxwell Seafuse, of Elmira, New York, class of 1893, College of Physicians and Surgeons, died on October 29, 1949, at the age of 80.

He began his practice in Gillett, Pennsylvania before moving to Elmira where he first engaged in the practice of general medicine. After taking several courses in Eye, Ear, Nose and Throat, he followed that specialty for many years. From the beginning of his medical practice he had the confidence of his many patients. He maintained his own hospital for caring for his patients, many of whom came to him from considerable distances.

Dr. Seafuse was a member of the Chemung County (New York) and the New York Medical Societies and the American Medical Association. Several years ago he was honored by the New York State Medical Society on his completion of 50 years of service as a physician.

DR. ROBERT P. WINTERODE

Dr. Robert P. Winterode, B.M.C., class of 1900, died in Baltimore on September 19, 1949, of coronary thrombosis at the age of 74.

He was a member of the American Medical Association, Fellow of the American Psychiatric Association and formerly Superintendent of the Crownsville (Maryland) State Hospital.

DR. JAMES E. HARTWELL

Dr. James E. Hartwell, B.M.C., class of 1891, aged 102 died on November 20, 1949 at the home of his daughter, Miss Ethylyn Hartwell, in Cheyenne, Wyoming.

Born in Franklin County, Virginia, on July 22, 1847, Dr. Hartwell practiced in his native state for eight years after graduation. In about 1900 he moved to Crawford, Nebraska where he continued the active practice of medicine until 1941 when he retired.

DR. LLOYD NOLAND

Dr. Lloyd Noland, 69, B.M.C., class of 1903, prominent Birmingham (Ala.) surgeon, died November 27, 1949 after a brief illness.

Dr. Noland was superintendent of the Tennessee Coal, Iron and Railroad Company health department since 1912. He was a past president of the Southern Surgical Association, Alabama Medical Association and Jefferson County Medical Society. He also was a member of the founders group of the American Board of Surgery.

A native of Gordonsville, Va., Dr. Noland received his medical training at the Baltimore Medical College, graduating in the class of 1903. As a young man he served with groups combating malaria and other tropical diseases in Panama.

Surviving are his widow, Mrs. Margaret Gillick Noland, three sisters and three brothers.

DR. WILLIAM A. SINTON

Dr. William Allen Sinton, Class of 1925 died on January 20, 1950 at the Union Memorial Hospital, Baltimore, after an illness of several months. Doctor Sinton was active in the Maryland National Guard, serving as regimental surgeon to the 110th Field Artillery prior to World War II and then as an officer with the Medical Corps of the 29th Division for four years during the past war. For many years he was associated with the Baltimore City Health Department. He is survived by his wife, Mrs. Elsie B. Sinton; two children, Mrs. John Stack and William A. Sinton, Jr. and a sister, Mrs. Herbert G. Smith of Norfolk, Va.

Christian, Justin Loomis, Paxtang, Pa.; P & S, class of 1890; aged 83; died, February 27, 1950, of carcinoma of the right parotid gland.

Darwin, John T., Gaffney, S. C.; class of 1889; aged 84; died, December 29, 1949.

Deutsch, William Frederick, New York, N. Y.; P & S, class of 1906; aged 68; died, January 10, 1950, of hypertension.

Downing, Edmund W. P., Franktown, Va.; P & S, class of 1886; aged 89; died, February 28, 1950, of heart disease.

Elmer, Edward O., Hartford, Conn.; P & S, class of 1894; died, April 13, 1950.

Glidden, Edson W., West Boylston, Mass.; class of 1907; aged 65; had been Superintendent of the Worcester County Sanatorium since 1931.

Goff, John Trevy, Smithville, W. Va.; class of 1924; aged 56; died, January 5, 1950.

Hala, William Wendell, Monroe, N. Y.; class of 1905; aged 65; died, February 11, 1950.

Hawks, Cyrus Eugene, Rockville, Md.; class of 1921; aged 57 died, December 16, 1949, of intestinal obstruction.

Hill, Lee Otis, Camden on Gauley, W. Va.; P & S, class of 1905; aged 69; died, February 27, 1950, of acute myocardial insufficiency.

Hofler, Ralph Hayes, Capt. USN (ret.), Washington, D. C.; aged 50; died, February 12, 1950, of rupture of the aorta.

Lakin, Harry Allen, Harrisburg, Pa.; class of 1903; aged 73; died, December 8, 1949, of coronary thrombosis.

Lightle, William E., North Berwick, Me.; B.M.C., class of 1894; died, May 1, 1950.

McCamey, Kenneth, Paterson, N. J.; class of 1916; aged 56; died, January 26, 1950, of coronary occlusion.

McCullough, Kenneth, Waycross, Ga.; class of 1915; aged 58; died recently, of bronchogenic carcinoma.

McGinn, James F. A., Pawtucket, R. I.; P & S, class of 1910; aged 63; died, December 31, 1949, of lobar pneumonia, chronic endocarditis and chronic arthritis.

McGinnis, Robert Henry, Jacksonville, Fla.; class of 1897; aged 80; died, December 27, 1949, of intestinal obstruction, carcinoma of the stomach with metastatic carcinoma of the liver.

Monroe, John Patrick, Sanford, N. C.; P & S, class of 1901; aged 79; died, March 17, 1950, of angina pectoris.

Mournighan, Thomas Francis, Providence, R. I.; B.M.C., class of 1907; aged 65; died, January 3, 1950.

Normand, Jean Napoleon, Fall River, Mass.; P & S, class of 1896; aged 79; died, May 5, 1950.

Peck, Robert Shannon, Cannelton, W. Va.; P & S, class of 1915; aged 61; died, March 24, 1950, of coronary insufficiency following amputation of left leg as a result of diabetic gangrene.

Pritchett, Charles Wesley, Danville, Va.; P & S, class of 1886; aged 85; died, January 26, 1950, of hypertensive heart disease.

Robinson, Francis A., Burlington, Mass.; B.M.C., class of 1894; aged 81; died, April 29, 1950.

Rohrbaugh, Edwin P., Casper, Wyoming; class of 1881; aged 90; died, January 23, 1950, of hypostatic pneumonia and cerebral hemorrhage.

Shaffer, Stewart Seibert, Mt. Wilson, Md.; class of 1919; aged 57; died, January 28, 1950, of hypertension and cardiovascular disease.

Sheffield, Herman Bernard, New York, N. Y.; P & S, class of 1895; aged 79; died, March 17, 1950, of arteriosclerosis.

Sinton, William Allen, Baltimore, Md.; class of 1925; aged 49; served during World War II; died, January 20, 1950, of hypertension and cardiovascular disease.

Street, Harry, Leroy O.; B.M.C., class of 1894; aged 78; veteran of the Spanish–American War; died, February 14, 1950, of coronary thrombosis with myocardial infarction.

Williams, Pearl, Providence, R. I.; P & S, class of 1896; aged 75; died, March 13, 1950, of acute myocarditis and pneumonia.

Wilson, Frank Ninium, Cumberland, Md.; class of 1914; aged 59; served during World War I; died, February 23, 1950, of bronchogenic carcinoma.

Wright, Fairfax George, Chambersburg, Pa.; class of 1903; aged 70; served during World War I; died, February 13, 1950, of duodenal ulcer.

Blessing, Arthur Lee, Boonsboro, Md.; class of 1891; aged 81; died, October 22, 1949.

Clymer, Frank Lee, Cumberland, Md.; class of 1886; aged 84; died recently.

Corson, Linne H., Cumberland, Md.; P & S, class of 1915; aged 64; died, September 23, 1949, of cerebral hemorrhage.

Devlin, Joseph Angelo, New York, N. Y.; class of 1906; aged 65; died, November 4, 1949.

Fitch, William Edward, Burlington, N. C.; P & S, class of 1891; aged 82; died, September 12, 1949.

Guthrie, James Kuykendall, Martinsburg, W. Va.; P & S, class of 1912; aged 62; died, December 5, 1949, of heart disease.

Greene, Ransom A., Waltham, Mass.; class of 1904; died, October 4, 1949.

Hawkins, John Frederick, Baltimore, Md.; class of 1906; aged 67; died, September 6, 1949, of cerebral hemorrhage and coronary thrombosis.

Infield, Thomas Herbert, Zanesville, O.; B.M.C., class of 1897; aged 79; died, November 4, 1949, of bronchopneumonia.

Johnson, Samuel B., Franklin, W. Va.; class of 1892; aged 82 died, November 8, 1949, of heart disease.

Loper, Arthur Clark, Greenport, N. Y.; P & S, class of 1896; aged 81; died, October 22, 1949.

Miller, Proctor Thayer, Altoona, Pa.; P & S, class of 1893; aged 78; died, September 28, 1949, of chronic nephritis.

Nixon, Edwin Jones, Petersburg, Va.; class of 1899; aged 73 served during World War I; died, December 9, 1949, of cardiorenal disease and uremia.

Pearson, Herbert Roscoe, West Milton, O.; B.M.C., class of 1893; aged 81; died, September 25, 1949, of pulmonary embolism following prostatectomy.

Piskorski, Abdon Valerian, Jersey City, N. J.; P & S, class of 1902; aged 72; served during Spanish-American War; died, September 28, 1949, of cerebral hemorrhage, hypertension and arteriosclerosis.

Sarratt, Sidney Gilbert, Union, S. C.; class of 1897; served during World War I; aged 74; died, November 22, 1949, of bronchopneumonia and cerebral arteriosclerosis.

Thomas, Joseph Enloe, Jefferson, S. C.; class of 1911; aged 62; served during World War I; died, November 29, 1949, of heart disease.

Tierney, Thomas F., Hudson, Mass.; class of 1901; aged 72; died, July 24, 1949.

Wagner, Frank E., Baltimore, Md.; P & S, class of 1894; aged 78; veteran of the Spanish-American War; died, July 24, 1949, of carcinoma of the prostate with metastasis to the liver and arteriosclerosis.

Winterson, George Craggs, Omaha, Nebr.; class of 1902; aged 70; died, October 31, 1949, of pulmonary edema and heart disease.

MEDICAL FRATERNITY SECTION

PHI BETA PI

After a period of lapse during the war years, the Phi Beta Pi, Zeta Chapter, was reactivated during October 1947 under the guidance of Dr. William C. Duffy, class of 1940. Since the activation, membership has grown to 18 members, and 14 pledges, with two chapter rooms located above the "Book Store Across the Street". The alumni have become interested and many old faces have been seen at the informal smokers.

This year Dr. E. H. Stewart, Jr. began the first of a series of informal talks which will continue monthly.

We hope to personally meet you on alumni day, June 9, 1950. The fraternity rooms will be open all day. Won't you drop in for a chat and some refreshments?

The present officers of the fraternity are:

Paul Gislason	Archon
Leo Ley	Vice Archon
Benjamin Adelstein	Treasurer
Rodney Grabill	Secretary

All correspondence should be directed to Rodney Grabill, Phi Beta Pi Fraternity, University of Maryland, School of Medicine.

PHI DELTA EPSILON

The scientific program of the Delta Epsilon Chapter of Phi Delta Epsilon included a series of lectures at the chapter house by distinguished men in medicine. In September, Dr. John C. Krantz, Jr. opened the series with prudent words of advice to both incoming freshmen, seniors and graduates. Dr. Mark Ravitch delivered a lecture, "Abdominal Surgery in Childhood." Dr. Emil Novak's subject was "Functional Bleeding and its Treatment." Dr. Jacob E. Finesinger spoke next on the re-organization of the Psychiatry Department at the University of Maryland and future psychiatric plans, continuing in an academic vein on "Operational Interview Technique." Dr. Megee Harvey led a discussion on the "Differential Diagnosis of Jaundice."

At an open lecture on March 22 in the medical school's main auditorium, Dr. Lawrence Snyder, Prof. of Medical Genetics and Dean of the Graduate School of the University of Oklahoma, delivered the annual Phi Delta Epsilon lectureship. His topic was "Heredity in a Modern World and How It Influences the Various Disciplines."

The fraternity's national convention was held at the Hotel Statler in Washington,

D. C. on Dec. 27–29, 1949 and was attended by many Delta Epsilon graduates and undergraduates. From the local chapter, Dr. David Silberman was elected President of the Board of Trustees and Dr. S. Shipley Glick was elected Grand Historian.

Delta Epsilon chapter was host to the Fourth District conclave on March 25th, at the Sheraton-Belvedere Hotel in Baltimore. In addition to the complete complement of local members, a number of guests from the Grand Body of the Fraternity and from other regions were present. New members from all chapters of the district were initiated in impressive ceremonies.

Among the undergraduates, Leonard Lister has been active in investigative research in Dr. Theodore Woodward's laboratory and in the Department of Infectious Diseases. Morton Smith and David Kipnes have been elected to the Alpha Omega Alpha Honorary Medical Society.

NU SIGMA NU

The 6th annual Alumni Banquet of Nu Sigma Nu was held at the Chapter House, 922 St. Paul Street on February 5th. Over twenty members of the Alumni Association were present as guests of the active chapter.

Dr. T. E. Woodward, class of 1938, spoke on "The Present Status of Anti-microbial Therapy".

John H. Hedrick, class of 1945, is now in practice at Beckley, West Virginia. Following a nine month internship at Mercy Hospital, he served two years in the army as flight surgeon.

Raymond J. Dempsey, class of 1948, is now Resident in Dermatology at the University Hospital, Ann Arbor, Michigan.

Donald B. Bond, class of 1948, is now Assistant Resident in Pediatrics at Union Memorial Hospital. On July 1, 1950 he will begin a year as Assistant Resident in Pediatrics at Johns Hopkins Hospital.

William J. Bannen, class of 1946, served a year of general residency at the H. J. Thomas Memorial Hospital, South Charleston, West Virginia, during 1947 and 1948. At present Dr. Bannen is in practice at Dunbar, West Virginia.

Dr. Robert C. Hunter, class of 1947, is now serving a three year Fellowship in Anesthesiology at the Mayo Clinic, Rochester, Minnesota.

Dr. E. Ellsworth Cook, class of 1943, is now in practice in Baltimore.

ALPHA OMEGA ALPHA

The Spring banquet of Alpha Omega Alpha was held on May 11th at the Stafford Hotel in Baltimore. At this meeting, Dr. Louis A. M. Krause, class of 1917, Professor of Clinical Medicine at the School of Medicine, Mr. William Esmond, class of 1951 and Mr. Leonard Lister also of the class of 1951, were initiated into the Society. Following a short business meeting, the Society and friends were addressed in Chemical Hall at the School of Medicine by Dr. Krause whose subject was "Observations on Medical and Ethical Practices in South Arabia".

PHI BETA PI

Sixty members of the Zeta Chapter attended a smoker held on April 28, 1950. Increasing numbers of alumni at these functions and a renewed interest in the Chapter is encouraging and of mutual interest to both graduates and undergraduates.

These informal smokers have been conducted along the lines of a seminar or open forum, the first guest speaker being Dr. Frank C. Marino. Four additional forums have been planned for the 1950–51 season, notice of which will be given. Alumni are always cordially welcome at Chapter Headquarters.

PHI DELTA EPSILON

Following recent elections, the officers of the Fraternity for the coming year will be as follows:

Consul—David Kipnis
Vice Consul—Morton Krieger
Scribe—Joseph Decklebaum
Chancellor—David Solomon
Senators—Daniel Clyman
Irving Hyatt
Marshal—William Rossin
Historian—Albert Stambler

Dr. Robert Chaimovitz, class of 1948 has been appointed Assistant Resident in Pathology at the Peter Bent Brigham Hospital, Boston. **Dr. Raymond Kaufman,** class of 1948 has been appointed Assistant Resident in Gynecology at Beth Israel Hospital, New York City. **Dr. Benjamin Silverman,** class of 1948 has been named Assistant Resident in Pediatrics at the Boston University Childrens' Hospital. Dr. Silverman interned at Sinai Hospital and Baltimore City Hospitals. **Dr. Benjamin Berdiansky,** class of 1945, after completing his Medical Residency at West Baltimore General Hospital is now practicing at 5004 Governor Ritchie Highway, Brooklyn Park, Maryland. **Dr. Jerome Pleet,** class of 1949, has been appointed Assistant Resident in Obstetrics at West Baltimore General Hospital, effective July 1, 1950. **Dr. Albert Himelfarb,** class of 1933, has been named President of the Graduate Club of the Baltimore group of Phi Delta Epsilon. **Dr. David Silberman,** class of 1915, Chief of Gynecology at Sinai Hospital, Baltimore has recently been elected President of the National Board of Trustees. **Dr. Samuel Shipley Glick,** class of 1925, has undertaken to compile a list of all members of Phi Delta Epsilon alumni of the University of Maryland who hold academic appointments on the Faculty of Schools of Medicine, large hospitals and medical centers. Cooperation of Alumni in support of Dr. Glick's undertaking is respectfully requested.

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THE PHYSIOLOGICAL ASPECTS OF TOTAL PANCREATECTOMY*

ALLAN H. MACHT, M.D.†

INTRODUCTION

Today, total pancreatectomy is part of the armamentarium of the surgeon. Based on early experimental work on animals and later correlated by the physiologists and surgeons, total pancreatectomy is being done more and more often. For islet cell neoplasms, it offers a cure. For carcinoma of the pancreas, it is a procedure which can eradicate the primary growth; but, of course, does not necessarily profess to cure. Therefore, it behooves the surgeon who is to perform this operation to know as much as possible about the anatomy of this region, the technical difficulties involved, and the physiologic disturbances that can be expected after removal of the pancreas.

EXPERIMENTAL PANCREATECTOMY

Early experimentation

In the year 1673, a young man, Johann Conrad Brunner (1), published a notebook describing his experiments on the pancreas of dogs. The first five dogs on which he ligated the pancreatic ducts and removed as much of the pancreas as possible survived the operation. By the third post-operative day they all were well on the way to recovery. Thus, it seemed that extirpation of the pancreas had little effect on animals. However, when this operation was carried out on the sixth dog, a very strange thing occurred. On the 2nd day, the dog refused food. By the 4th day he was "thirsty and drank exceedingly from a brook flowing past the town." He died on the 8th day. One can only speculate on whether Brunner had finally removed enough of the pancreas to get a true syndrome of diabetes in this dog.

For almost 200 years, little experimental work was done on the pancreas. In 1856 Claude Bernard (2) attempted to remove the gland completely. All of his attempts were failures, so he directed his work elsewhere. He then tried experiments in which he ligated the pancreatic ducts in some dogs, while in others, he injected oil. As a

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result of these experiments, Bernard noted that there was an excess of fat in the feces of some of the dogs. Other experimenters, such as Bernard and Colin (2) in 1858, Klebs and Munk (2) in 1869 and Shiff (2) in 1872, either tried to excise the pancreas completely or repeat Bernard's work of injecting oil and blocking the pancreatic ducts. All of these investigators came to the conclusion that the pancreas could be removed or its ducts blocked without any ill effect to the animals. In the light of present knowledge, one can speculate that the reason for failure in these experiments was that only the main pancreatic ducts were blocked or only a portion of the pancreas was removed. Even today, total pancreatectomy in animals with improved methods of anesthesia and pre- and post-operative care taxes the skill of the surgeon.

In 1889 Von Mering and Minkowski (3) working in Naunyn's Clinic made their epoch discovery that extirpation of the pancreas in dogs caused diabetes. They did this in an ingenious way and noted many things that were the basis for research on the pancreas for many years to come. At first, they excised the pancreatic ducts and a portion of the duodenum. They then noted that fatty stools developed and that atrophy of the pancreas followed this procedure. At the second operation, they removed the small atrophic portions of pancreatic tissue that remained. Diabetes ensued and the animals perished within the week. They then concluded that the diabetes which resulted from removal of the pancreas could only be accounted for by the cessation of some factor of this organ which is necessary for the utilization of sugar. Abelmann (4) the following year, proved that removal of the pancreas caused a loss of fat and nitrogen in the stool. He also noted a very important fact; that even in totally depancreatized dogs fat-splitting had not materially been affected. With these two experiments as the impetus for further research on the pancreas, physiologists turned their attention to the pathology and physiology of the pancreas. Von Mering and Minkowski and Abelmann's experiments were proved and disproved many times.

Internal Secretions of the Pancreas

With the advent of a means of determining blood sugar and urinary glucose excretion, the syndrome of diabetes following pancreatectomy began to materialize as a definite entity and physiologists were now experimenting more and more on pancreatic diabetes. In 1916, Epstein and Baehr (5) using depancreatized cats showed that almost all calculations of blood sugar on these animals were erroneous. They proved complete depancreatization by autopsy on every animal. Having noted that the animals after operation were very thirsty and drank large quantities of water, they wondered about the effect on blood volume. By performing hematocrit determinations before and after operation, they noted that there was always a hemodilution after pancreatectomy which remained above normal until death ensued, which was in about a week. They proved that all their blood sugar readings had to be corrected, taking this increased blood volume into account. They found also that the blood sugar rose rather steadily for the first 26 hours and then remained steady until about the 100th hour and then rose again. They also noted that the blood sugar invariably rose 24–36 hours before stupor and death ensued. With this last rise, the urinary glycosuria decreased and albuminuria increased. It seemed to them that this rapid hyperglycemia was a result of sugar retention because of impaired kidney function. They noted that with a rising hyperglycemia the glycosuria and acetonuria decreased. If the cats were well nourished, there was an initial rapid rise in the blood sugar and then it continued to rise rather slowly. If, however, the cats were malnourished, there was an initial slow rise in the blood sugar and then a rapid increase. In dogs, also, it was noted that the nutritional condition of the animal when pancreatectomy was performed determined to a large extent the length of survival of the animal. G. G. Ring (6) found that thin dogs survived longer than fat ones. He also noted that the length of survival of dogs following pancreatectomy depended on the activity of the laboratory in which the experiment was performed. Often, in his active research program, dogs were subjected to many operations leading to a state of undernutrition before a total pancreatectomy was performed. Thus, these animals survived longer than others which only underwent total pancreatectomy.

In 1922, Banting and Best (67) by giving an extract, insulin, made from the pancreas of animals 7–10 weeks after their pancreatic ducts were ligated and the gland allowed to atrophy, were able to reduce the blood sugar and urinary glucose excretion in depancreatized dogs. Thus, this new hormone was not only useful to mankind, but also enabled the scientists to better study the effects of depancreatization in animals who could now be kept alive longer than a week by the use of insulin.

Fisher (8), in 1924, began the use of insulin almost immediately and reported that dogs could be kept alive at least 8 months after pancreatectomy, provided they were given insulin. He noted that the normal body weight could not be maintained. Although the diabetes was well controlled, there was still an intense polyphagia and polyuria. He also (and for the first time) noted a significant degeneration in the liver. He postulated that it might be caused by the chronic toxic action of insulin or possible impurities in the insulin itself. Allan, Bowie, Macleod and Robinson (9) in England also noted that depancreatized dogs kept alive on insulin, meat, and cane sugar would die in 1–7 months and that the liver would show extensive fatty changes. In 1926 Macleod and Markowitz (10) confirmed reports that dogs treated with insulin and diet would succumb in 2–7 months and show fatty infiltration of the liver. However, they found that if raw pancreas was added to the diet these animals would live indefinitely. In 1931, Hershey and Soskin (11) found that when lecithin was added to the stock diet of depancreatized dogs maintained on insulin, fatty infiltration of the liver was prevented. When dogs who had not been fed lecithin for months had lecithin added to their diet, the liver did not show the degree of fatty infiltration found in the livers of dogs without lecithin supplement. These men were able to maintain depancreatized dogs for long periods of time and also were able to prevent fatty changes in the liver by the addition of various substances in the diet. Chaikoff (12) in 1936 showed that he could keep dogs alive over 4 years by the addition of vitamins alone to a diet of insulin, lean meat, sucrose and bone ash. His animals also had fatty livers. He concluded that even in the presence of a fatty liver, these dogs could survive a long time on adequate diets especially rich in vitamins. Chaikoff (13) also showed that in his animals, the process of fatty change of the liver was a rather slow one, showing intense interlobular fibrosis with associated changes in the liver cord cells much as in an advanced portal cirrhosis. Feeling that other investigators failed because of the poor diets offered their animals, Chaikoff (14) claimed that with a high caloric, high protein and high vitamin diet, depancreatized dogs, despite their poor absorption, could be maintained almost indefinitely without raw pancreas or allied substances being added to the diet. He also pointed out that there were objections to his regime because the vitamins contained small amounts of choline. However, the amount of choline necessary to effect a curative action on a fatty liver as shown by Kaplan and Chaikoff (15) was many times greater than present in the diet advanced by Chaikoff.

In 1936, Dragstedt (16) revolutionized the concept of pancreatic physiology by announcing a new hormone concerned in some way with the normal transportation and utilization of fat. This new substance, an alcoholic extract of raw pancreas named "lipocaic," could be given orally and was capable of preventing fatty infiltration of the liver. He claimed this was a new internal secretion of the pancreas. In 1941, Montgomery (17) and associates disagreed with Dragstedt's hypothesis: that his new principle was an internal secretion of the pancreas. They obtained pancreatic juice from other dogs with pancreatic fistula and fed this to dogs who were either depancreatized or who had pancreatic ducts ligated. All dogs were in the best possible physical condition. They found that fresh pancreatic juice was capable of preventing fatty liver in both groups, while the control animals invariably developed fatty infiltration of the liver. Thus, they contended that there was something in the external pancreatic secretion that helped prevent fatty liver and not another new hormonal secretion. Again in 1943 Dragstedt (18) reiterated his stand on lipocaic more forcefully. He contended that ligation of the pancreatic duct produced fatty liver not by the prevention of pancreatic juice from reaching the intestinal tract but by the resulting atrophy of the pancreas and destruction of the cells which manufacture this anti-fatty liver principle. To add proof to his statement, he cited the work of Ham and Haist (19) who injected anterior pituitary extract into dogs. By destroying the Alpha cells, they were able to produce diabetes. All of his animals failed to show fatty infiltration of the liver. The Beta cells of the pancreas remained intact. Canepa (20) and associates in 1948 confirmed Dragstedt's claims for lipocaic in that it prevented the development of fatty liver in their dogs after they had suffered pancreatic duct ligation. All the control dogs developed fatty liver. Entenman and his associates (21), however, failed to obtain any such results when they used lipocaic. They also speculated that the reason Dragstedt got such results was that his pancreatic juice was of poor quality because he used a duodenal pouch to collect the juice. Thus, the active principle may have been absorbed which would account for the failure of the pancreatic juice or external secretion to protect the patient. This group (22) not only failed to produce lipocaic but found another principle which was extracted in a different way. So far, this has never been confirmed.

Thus, it is known that by feeding the depancreatized dog raw pancreas, lecithin, choline, lipocaic or pancreatic juice, it can be kept alive indefinitely with insulin and a high vitamin, high caloric diet.

Other observers tried to determine the cause of fatty livers in depancreatized or duct ligated dogs by other means than assuming an anti-fatty liver factor. Ralli and Rubin (23) noted that in almost all cases the dogs had been fed whole raw lean beef as their source of protein. With this beef as a source of protein there was impaired digestion and absorption of protein leading to a state of protein depletion. In human beings, the importance of proteins in preventing a dietary fatty liver is widely known. Thus, in assuming the dogs may have difficulty utilizing the protein in raw lean beef, they gave their dogs a dried meat powder. These dogs proved their contention in that those on raw meat developed fatty liver in 8 weeks time while those on meat powder did not develop a fatty liver. To further prove their point, they added a water extract of meat to the dried powder and found that fatty liver would develop in dogs fed this mixture. Thus, they postulated that fatty liver may be caused by a state of protein depletion in depancreatized animals caused by impaired digestion of and absorption of protein; and/or, there is a factor in meat which caused fatty livers.

It can be concluded that a depancreatized animal becomes a diabetic because of the lack of insulin and also develops a fatty liver. The cause of the fatty liver is not too well understood but it can be prevented and/or corrected by adding various substances as raw pancreas and lipocaic, to the diet. From these facts, one can begin to postulate that if the pancreas were removed in man, it would be possible to maintain the patient indefinitely on insulin for the diabetes mellitus and a high vitamin, high caloric, high protein diet together with an anti-fatty liver supplement to prevent fatty infiltration of the liver. Thus, the internal secretions of the pancreas, whether one or two in number, can be supplied and total pancreatectomy is a feasible operative procedure if the effect of exclusion of the external pancreatic secretion, or pancreatic juice, on the blood constituents and digestion can be managed in a similar successful manner.

External Secretions of the Pancreas

In order to study the effect of exclusion of pancreatic juice from the intestinal tract, two methods have been used. By one technique, the pancreatic juice is brought to the outside by means of a fistula and removed. The other method is by ligating the pancreatic ducts or excision of the pancreas. For many years physiologists were establishing pancreatic fistula and proclaiming that animals could live indefinitely with pancreatic juice being excluded from their gastrointestinal tract. However, in 1926, Elman and McCaughan (24) showed that the reason dogs lived with external open pancreatic fistula was either that it was able to lick the juice from his abdomen at the opening of the fistula or that some pancreatic juice was reaching the intestines from the accessory pancreatic ducts. They placed a cannula in the main pancreatic duct and avulsed the accessory ducts. The animals lost their appetites rapidly and emesis began about the 4th day. Death resulted from dehydration in 5 to 8 days. Elman and Hartman (25) discovered that pancreatectomized dogs could be kept alive for weeks by giving intravenous Ringer's solution, thereby preventing dehydration and restoring some of the electrolytic imbalance. If these moribund dogs were given pancreatic juice by mouth, they would quickly recover. Thus, it was not practical to study the effect of total loss of pancreatic juice on digestion by this method, as the dogs were rapidly succumbing to dehydration and electrolytic imbalance by the continued withdrawing of a secretion which materially affected these factors in the body.

After total pancreatectomy as shown by Fauley and Ivy (26), all of the dogs had decreased emptying time of their stomachs. This was not affected by alkali. They postulated that this might have been caused by the polyphagia which all the dogs exhibited. When the pancreatic ducts alone were ligated, there was an increased secretion of gastric juice which they considered to result from the delayed emptying time.

Other investigators studied the effect of pancreatectomy on intestinal secretory activity. Koskowski and Ivy (17) found that the quantity of intestinal juice was not affected. However, one of the constituents, invertase, was increased for the first few days and then disappeared completely for a while, only to reappear fluctuating widely above normal limits. The other constituents as amylase and lipase were not too much affected by pancreatectomy.

The analysis of the dogs' stools after pancreatectomy or duct ligation offers an insight into the effect of the absence of pancreatic juice on the absorption of certain basic foodstuffs from the gastro-intestinal tract. At the beginning of the 20th century, many investigators were studying the effect of excluding pancreatic juice from the intestines. In 1890, Abelmann (4) found that in his dogs there was an increased loss of fat and nitrogen in the stool but the degree of fat splitting was not altered. Other observers could not repeat his experiments and many such as Lambroso (4) claimed that there was no interference with fat and protein absorption. The reason for these conflicting results may be that it was quite difficult to ligate all of the pancreatic ducts and even if one were successful in doing so, the ducts may recanalize and form fistulous tracts. In 1909, Pratt, Lamson and Marks (28) repeated the early experiments, but for the first time placed a portion of omentum between the pancreas and duodenum after avulsing the ducts. They found in every case except one that when pancreatic juice was excluded from the intestine, there was a diminution in the absorption of nitrogen and fat from the gastro-intestinal tract. They also confirmed Abelmann's work that the proportion of split fat in the feces was normal. Thus, they concluded that there was no lack of a fat splitting enzyme. At autopsy, the dog in which these results were not collaborated was found to have a sinus tract between the pancreas and the intestines. They also found that if they gave pancreatic ferments to these animals their digestion was much improved. In 1915, Cruickshank (29) confirmed these findings, although his depancreatized dogs died within the week of diabetic coma. He also showed that dogs who were in better physical condition and had a two stage pancreatectomy absorbed a larger percentage of fat than other dogs. Handelsman and his coworkers (30) found that by increasing the amount of carbohydrate, protein and fat in the diet, these animals would absorb much more and could be kept in a good state of nutrition without the addition of pancreatic juice or raw pancreas to their diet. Maltby (31) found that the digestion of protein was only 60 per cent in his depancreatized dogs as compared with 99 per cent in normal dogs on a similar diet. Using man as a subject, they found that 60 per cent of the proteins were split in the stomach. He concluded that without pancreatic secretion there was no digestion of proteins in the intestinal tract. In 1937 Schmidt and his associates (32) found that nitrogen utilization was about 70 per cent and fat about 50 per cent. The stools were large and foamy. On pancreatin, however, the loss of protein, fat and starches was decreased 50–60 per cent, and the stools were better formed. The work of Boyce and McFetridge (33) claimed that after ligation and division of pancreatic ducts, as substantiated by autopsy, there was no change in the absorption of fat and proteins in the diet. This, however, has not been confirmed by other more recent investigators. Coffey, Mann and Bollman (34) in 1940, found that there was an immediate pronounced loss of fat and carbohydrates via the feces following pancreatectomy. An increased excretion of fecal nitrogen was related to the increased bulk of the feces. They found that duct-ligated dogs reached the same degree of excretion of these products in the stool after a few days. This might have been the result of the absorption of some enzymes into the blood stream before the pancreas became atrophic. The normal fat loss in the stool is between 2–4 per cent while these dogs lost anywhere from 54–62 per cent. These same workers (35) found that by giving pancreatic juice, raw pancreas, or pancreatin the carbohydrate loss in the feces was reduced, and with the decrease in bulk of the stools the nitrogen loss was decreased. The utilization of fat and nitrogen per se were not affected. In conclusion, they stated that they couldn't make a product sufficiently similar to normal pancreatic juice to bring about a normal effect. Vermeulen, Owens and Dragstedt (36) based their research on this problem on the works of Nothmann and Wendt (37, 38). These investigators claimed that the fat was split in the large intestine by bacteria and it was hydrolized in the small intestine. They fed their depancreatized dogs oleic acid and found only the normal amount of 13–34 per cent in the stool. Thus, they concluded that the defect in fat absorption in depancreatized animals was on the basis of failure of digestion of fats by the pancreatic lipase in the duodenum and jejunum. These workers, however, could not substantiate this work because they found that while a neutral fat was not absorbed as well as its fatty acid there was still an impaired absorption in both cases. In fact, other animals absorbed both kinds of fat equally well.

With the ability to determine the many blood constituents, a whole new field was opened to students of pancreatic physiology. By determining the levels of blood lipids, lipase, amylase, and other substances, it was possible to obtain a better understanding of how total pancreatectomy exerted its effect on the experimental animal. In 1934 Chaikoff and Kaplan (39) found that following total pancreatectomy the blood lipid level was reduced and that this reduction involved the total fatty acids, phospholipids and cholesterol. In the case of cholesterol, the esterified portion completely disappeared in almost every case. They believed this alteration in blood levels resulted from a factor in the liver because the same results could be obtained on certain liver diseases whereas the pure inability to absorb fat in dogs with a fat free diet did not give such striking changes in the blood constituents. Knowing that a fatty liver develops in depancreatized animals not specifically protected, these observers (40) then decided to study the liver constituents of depancreatectomized animals to see if this would account for the low blood levels. The liver showed an increase in the total lipids but this was caused by the amount of neutral fat present. The phospholipids and total and esterified cholesterol, maintained their normal percentage relationship to the total fats present. Therefore, the liver was not storing up the lost factions from the blood. Rubin and Ralli (41) found that this fall in blood lipids was in the plasma lipids only and that the red blood cell lipids remained normal. They wondered if there was another internal secretion of the pancreas or whether there was a substance produced by pancreatic enzymes acting on food which affected the blood and liver lipids. Chaikoff and Kaplan (42), still studying this problem, found that the ingestion of raw pancreas not only could prevent a fall in total lipids and cholesterol esters but would cause an increase in their amount in the blood stream. Raw pancreas would also stop the fall in blood lipid levels on depleted animals and would cause a rise in all constituents to higher than normal levels. Entenman and his coworkers (43) confirmed these results with raw pancreas and found that pancreatic juice had the same effect. While working on lipocaic, Canepa, Tanturi and Banfi (20) found that lipocaic also would prevent the fall in total cholesterol and blood phospholipids. Thus, while it was generally concluded that the blood levels of the fatty constituents of the plasma were inclined to fall, the reason for this fall was unknown. However, one has an adequate means of preventing this fall by the use of pancreatic fractions in the diet.

Serum lipase determinations then entered the field as a means of demonstrating what was affecting the fats in the blood and liver. Dozzi (44) found that serum lipase levels fell after pancreatectomy. However, Goldstein and his coworkers (45, 46) found that in totally depancreatized cats the fall in serum lipase was only temporary and the level soon returned to normal. Also in duct-ligated cats there was at first a fall in serum lipase followed by a return to normal levels. Thus, they concluded that the blood lipase level was influenced by extrapancreatic factors. Nothman, Pratt and Benotti (47) working on dogs also came to the conclusion that the serum lipase level was a result of pancreatic and extra-pancreatic factors.

With the blood amylase levels being used more and more frequently in determining pancreatic disease, it is interesting to note what happens in total pancreatectomy. Tuchman (48) and his associates showed that the rise in blood amylase to the injection of acetyl Beta methylcholine chloride was absent in depancreatized dogs. Popper and Sorter (49) found that after ligation of the pancreatic ducts, there was a rise and then a fall to normal in the serum amylase level. Goldstein (44, 45) confirmed this work on cats and concluded that there was an extrapancreatic factor that influenced the serum amylase level. Therefore, the blood amylase and lipase levels after total pancreatectomy was maintained by extra pancreatic factors after a period of adjustment.

By the use of various principles such as raw pancreas, pancreatic juices, a lipocaic, the inability to absorb proteins, fats and carbohydrates in the diet could be overcome and the animal could live a normal life. The fluctuations in blood fat levels could also be prevented. Thus, the external secretion of the pancreas is not a serious obstacle to total pancreatectomy in man.

TOTAL PANCREATECTOMY IN MAN

Introduction

After many years of research on experimental animals, the physiologists have given surgeons a background upon which to approach total pancreatectomy in man.

The ability to replace the internal and external secretions of the pancreas and thereby prevent diabetes, fatty liver, the loss of foodstuffs in the stool and changes in the blood constituents is well understood. Therefore, the surgeon and internist now can offer this formidable operative procedure with a certain degree of assurance as to the physiologic outcome of the operation. A word of caution must be given the surgeon concerning the formation of peptic ulcers following exclusion of pancreatic juices from the duodenum. In 1931, Elman and Hartman (25) noted that if they maintained their depancreatectomized dogs with Ringer's solution while the total pancreatic secretion was being withdrawn, all of the dogs developed duodenal ulcers. In 1948, Poth, Manhoff and DeLoach (50) helped clarify this phenomenon. While depancreatized dogs normally did not develop peptic ulcers, they had a predisposition toward the development of ulcers. They showed this by injecting histamine in dogs with total pancreatectomy, in dogs with ligated pancreatic ducts, and in dogs with alloxan diabetes. The control group and the dogs with alloxan diabetes did not develop ulcers while the other two groups of dogs did despite the addition of pancreas and lecithin to the diet. Owens (51) summarizes this discussion with a plea and a warning that in performing a total pancreatectomy one should be certain that the gastric juices are neutralized by bile.

At first, partial pancreatectomies were performed for carcinomas arising in the head of the pancreas and around the ampulla of Vater. At first the pancreatic ducts were anastomosed to the intestines with a large degree of failure and leakage of pancreatic juice into the intestinal cavity. Later, surgeons simply ligated the pancreatic ducts. Whipple and his group (52) reported in 1935, that their three patients had good absorption of proteins and fat in their diet and they did not develop fatty livers. In 1941, Whipple (53) reported three more cases in which 2 of the patients absorbed most of the fat in the diet while only one needed a pancreatic preparation by mouth to allow adequate fat digestion and absorption. With this knowledge of the ability of man to survive in the face of the absence of pancreatic digestion and with insulin in readiness, the surgeons were willing to attempt total pancreatectomy.

Since 1943 there have been 20 cases of total pancreatectomy reported in the literature. In most instances, besides removing the entire pancreas, the duodenum and pyloric portion of the stomach were also removed. In some cases where the splenic artery was damaged during the procedure or in order to make the operation easier, a splenectomy was also performed. The survival time of the patients depended on whether the lesion was an islet cell adenoma pancreatic calculi, or carcinoma of the pancreas. In the patients who survived the operative procedure, it was possible to study the physiologic alterations that occurred and thereby to add to the knowledge of the physiology of total pancreatectomy in man.

Pancreatic Diabetes

After total pancreatectomy, the blood sugar quickly rose in the hours following the procedure and a diabetic state ensued. It was quickly noted by most investigators that the patient was very sensitive to insulin and the dosage of the drug used had to be calculated very carefully. It was common to watch the patient go from a state of hypoglycemia to one of hyperglycemia many times a day. After a few weeks the patient usually could be regulated on a standard diet and a constant amount of insulin (whether plain or protamin zinc) every day. The average dose of insulin was apparently 40 units per day with a usual range of variation between 30 and 50 units per day. It is of interest to note that this insulin requirement classifies these patients as moderately severe diabetics. There were three patients who were diabetics before operation. Patient number 8 was being controlled on 20 units of regular insulin before operation and afterwards needed about 40 units of insulin per day with his diet. Another diabetic, number 9, while taking 50–90 units of insulin per day before operation, needed only about 40 units post-operatively. Patient number 20, whose diabetes could be controlled on a diet alone before operation, now needed 40 units a day. Thus, in two cases the diabetes seemed to be worse while in the other it seemed to be improved. This statement appears quite deceptive since so much of the physiologic activity of these patients had been altered by the operation and post-operative care that it is almost impossible to draw any accurate conclusions. The change in nutritional state of the patient before and after operation, the change in diet and along with this the change in absorption of foodstuffs from the gastro-intestinal tract, all play a part in deciding how much insulin the patient needs.

The operative procedure itself in which a portion of the stomach and the duodenum are excised may play a part in the insulin requirement of the patient. Besides all these factors, any infective process will alter the insulin requirement of the patient. This was demonstrated in case 20 and together with the results of cases 8 and 9 in which insulin was withdrawn from the patient and studies made to show that depancreatized patients act like true diabetics in altering their insulin requirements in the face of infection and in being capable of producing ketone bodies. Thus, while these patients tended to manifest their diabetes to only a moderate degree, they showed that they were true diabetics in being able to manufacture ketone bodies, in reacting to infection, and changing their insulin requirements with changes in diet, weight and activity.

Digestion of Foodstuffs

After total pancreatectomy there seems to be conclusive evidence that there is some impairment of man's ability to digest and absorb the fats and proteins in the diet. Whether the giving of pancreatin has any affect on the amount of absorption is again a much debated question. It may also be of interest here to cite the effects of only ligating the pancreatic ducts as occurs in operations on the head of the pancreas alone. Wollaeger (54) in 1948 showed that in all patients in whom the pancreatic ducts were ligated, there was an increased amount of fat and nitrogen in the stools. This increase was more than in patients who had undergone a subtotal gastrectomy alone. By increasing the fat in the diet, more fat was absorbed in the intestinal tract but the loss in the stool was even greater. Thus, the efficiency of the gastro-intestinal tract is decreased. If one increases the protein in the diet, much more is absorbed than is lost and thereby the efficiency of the intestine is increased. If pancreatin is given to these patients, the loss of foodstuffs in the stool is decreased about 50 per cent. Whipple (53) in 1941 cited two cases and Brunschwig (55) in 1944 cited experimental work on a Rhesus monkey which showed that normal absorption of ingested fat can and does occur when no pancreatic juice enters the intestines. The discrepancy in these reports cannot be understood and in assuming that some pancreatic juice must enter the intestine somehow in the cases reporting normal digestion seems to be a possible explanation for the variance in results.

There were 8 cases of total pancreatectomy in which stool studies were performed in order to determine the efficiency of the gastro-intestinal tract. Referring to the chart, it can be readily seen that all 8 patients had impaired digestion of protein and fat. Fowweather (56) in studying the composition of stools gives the following data:

Dry matter, per cent of fresh feces	4.6–38.0
Total fat, per cent of dry matter	7.3–27.6
Neutral fat, per cent of dry matter	2.5–11.8
Neutral fat, per cent of total fat	24.6–60.1

Thus, one notes a wide variation in normal individuals on an unregulated diet. However, all of these patients studied showed a loss of fat and a bulkier stool than the variations in this table. When pancreatin was added to the diet, the absorption of fat, in 7 out of 8 cases, improved and the stools became less bulky, but there still was a greater loss than normal. As a rule persons with subtotal gastrectomies also have a somewhat bulkier stool and lose more fat in their feces than normal. Therefore, the combination of a subtotal gastrectomy, duodenectomy and pancreatectomy seems to affect the composition of the feces much more than a single operative procedure.

Blood and Liver Changes

The changes in the blood plasma concentrations of the lipids, cholesterol, cholesterol esters and amylase are interesting since in these determinations one has the greatest variation from the experimental data on animals. On the 6 patients studied there is no evidence that the total lipid, cholesterol, or cholesterol ester levels are significantly affected by total pancreatectomy. All determinations seem to vary widely but usually within the limits of normal and no abnormal trends seem to be evident. These patients for the most part did not have any pancreatic preparation in their diet. In line with such findings, all liver function tests performed on these patients were normal. In only one case was an early fatty liver noted at autopsy, case 9, who died in diabetic coma which can well account for the liver changes.

In the 20 cases of total pancreatectomy reported to date, the physiologic disturbances correspond with the changes that were anticipated in experimental research. The diabetes is milder than that expected. The alteration in the absorption of fat and proteins was as anticipated. The surprising result was that the plasma lipids did not seem to be altered too much and the development of a fatty liver was not apparent. However, these results may not be final since it may take a longer time for man to develop similar changes that are so evident in animals.

TABLE I

Chart showing important features of the 20 reported pancreatectomies in man

CASE NUMBER	SURGEON	DATE OF OPERATION	PHYSIOLOGIC STATE	OPERATIVE PROCEDURE	DIAGNOSIS	SURVIVAL TIME	CAUSE OF DEATH	TIME INTERVAL	INSULIN REQUIREMENTS	STOOL STUDIES			BLOOD PLASMA STUDIES (MGM. %)					LIVER FUNCTION TESTS B.S.P.
										% fat	% Prot.	Remarks	Total lipids	Fatty acids	Cholesterol	Cholesterol esters	Amylase	
1	Rockey (58)	6/21/42	Abdominal pain, no jaundice or change in bowel habits	Pancreatectomy Duodenectomy Subtotal gastrectomy	Adenocarcinoma of body of pancreas	15 da.	Bile peritonitis Pulmonary atelectasis One gram of pancreatic tissue remained		27U Reg./day. Marked sensitivity to insulin									
2	Priestley (59, 60, 61, 62)	7/15/42	Fainting spells, hypoglycemia	Pancreatectomy Duodenectomy Subtotal gastrectomy	Islet cell adenoma	5¼ yr.+		1 mo.	20U Reg./day	35–70	25–53	Pancreatin orally had no effect. Excess fat in diet caused diarrhea and cramps	613	397	216	121		No retention
								18 mo.							Normal			No retention
								33 mo.	18–24U Reg./day									
								38 mo.	30U Reg./day						Normal			
								5¼ yr.	18–24U Reg./day	51	43.5		806	596	210	120		No retention
3	Clark (63)	2/13/43	Jaundice—3 weeks, anorexia, abdominal pain	Pancreatectomy Splenectomy Pylorectomy Partial duodenectomy	Carcinoma of common bile duct with invasion of pancreas	10 da.	Hepatorenal failure Uremia, invasion of portal vein		30–40U Reg./day. Sensitive to insulin									
4	Brunschwig (64)	2/26/43	Diarrhea, abdominal pain, jaundice 2 mos.	Pancreatectomy Duodenectomy Splenectomy	Carcinoma of entire pancreas	3 da.	Massive bilateral pneumonia											
5	Brunschwig (64)	5/23/43	Abdominal pain, jaundice — 2 months	Pancreatectomy Duodenectomy Splenectomy	Carcinoma of entire pancreas	9 da.	Metastatic carcinoma Partial atelectasis Perforation of common duct to abdominal wall		Less than anticipated									

		1943			Carcinoma of common bile duct invading the pancreas	11 da.	Metastasis Gastric hemorrhage Peritonitis		50U Reg./day Sensitive to insulin									
7	Follis (65, 66, 67)	1/14/44	Painless jaundice	Pancreatectomy Duodenectomy Splenectomy	Carcinoma of pancreas	14 mo.	Metastasis, partial obstruction Stomal ulcer Pulmonary embolism	7 da.					709					
								20 da.					563				6.4	
								100 da.	26U P.Z.I. with 8U Reg. twice a week	38.7T	.8 gm. N_2	No pancreatin						
								40 wk.										
								8 mo.	40U P.Z.I.				390		188		11	
								10 mo.		av. 20		With pancreatin						
8	Dixon (59, 68, 69)	5/12/44	Diabetic 11/42 post cholecystojejunostomy 12/43	Pancreatectomy Splenectomy Duodenectomy Subtotal gastrectomy	Carcinoma of the pancreas or of the common bile duct	19 mo.	Anemia, jaundice Abdominal mass	Pre-op.	20U Reg./day									
								15 da.	30U Reg./day				615	415	200	120		
								25–36 da.	32–36U Reg./day	52.7	45.46	Without pancreatin	1069	802	267	159		No retention
								37–42 da.										
								37–42 da.		42.4	37.51	With pancreatin						
								232–237 da.		49.49	40.23	Without pancreatin						
								250 da.	10U P.Z.I. and 30U Reg./day			Neutral and fatty acid % not changed	708	471	237	156		No retention
9	Brunschwig (70, 71, 72, 73)	9/ 7/44	Diabetic, jaundice—3 weeks, Stenorrhea not affected by pancreatin. Abdominal pain—1 month	Pancreatectomy Duodenectomy Splenectomy Total gastrectomy, left adrenalectomy Omentectomy	Carcinoma of body of pancreas with metastasis	3½ mo.	Carcinomatosis Diabetic coma No pancreatic tissue Liver shows some fatty degeneration and early cirrhosis	7 mo. pre-op.	60–90U Reg./day			Weight of feces the same despite pancreatin and change in diet	800		147			
								5 mo. pre-op.					1260				81	
								4 da. post-op.							153			
								5 da.					1007					
								1 wk.				Weight post-op. so great as to make calculations, difficult.					9	
								2 wk.					987		260		10	
								4 wk.					855		240			
								5 wk.					850				66	
								8 wk.									71	
								2 mo.	40U Reg./day Sensitive to insulin									
								2½ mo.				Pancreatin, low fat diet and belladnnna reduced weight of stools	977					

TABLE I—*Continued*

CASE NUMBER	SURGEON	DATE OF OPERATION	PHYSIOLOGIC STATE	OPERATIVE PROCEDURE	DIAGNOSIS	SURVIVAL TIME	CAUSE OF DEATH	TIME INTERVAL	INSULIN REQUIREMENTS	STOOL STUDIES			BLOOD PLASMA STUDIES (MGM. %)					LIVER FUNCTION TESTS B.S.P.
										% fat	% Prot.	Remarks	Total lipids	Fatty acids	Cholesterol	Cholesterol esters	Amylase	
10	Waugh (59, 74)	10/20/44	Fainting spells; hypoglycemia, tail and body of pancreas resected 5/43	Excision of remaining pancreatic tissue Partial duodenectomy Partial gastrectomy Cholecystostomy 3 wks. later	Islet cell adenoma	52 mo.+		70 da.					510	332	178			
								123 da.					351	224	127			
								128 da.	6U P.Z.I. & 26U Reg./day				Rose slightly					
								8 mo.	6U P.Z.I. & 20U Reg./day									
								3 yr.	16U Reg. and 8U P.Z.I./day				388	238	150	62	80	Plus 2 retention
11	Clagett (60)	11/17/44	Abdominal pain since 1937, soft light stools 2–5 day for 2 years. Cholecystostomy 7/27/44	Pancreatectomy Splenectomy Subtotal gastrectomy Partial duodenectomy Resection of lower end of common duct	Chronic pancreatitis Pancreatic lithiasis	2½ mo.	Insulin reaction	25 da.					675	465	210	132		
								34 da.					Essentially unchanged					No retention
								36 da.	8U P.Z.I. & 30U Reg./day									
12	Whipple (74, 76)	2/ 3/45	Epigastric pains, frequent bulky, fatty stools. No jaundice	Pancreatectomy Pylorectomy Duodenectomy	Chronic pancreatitis Pancreatic lithiasis	1 yr.	Died in tuberculosis sanitorium	5 mo.	30–70U Reg./day	24		Without pancreatin						
								13 mo.	84U P Z.I./day	17		With pancreatin						
13	Whipple (74)	4/24/45	Epigastric pain — 10 wks. Voluminous foul putty stools	Pancreatectomy Duodenectomy Pylorectomy Splenectomy	Pancreatic lithiasis Fibrosis of pancreas	7 da.	Bile peritonitis Portal vein thrombosis Shock Pulmonary edema		50–90U Reg./day failed to control glycosuria									
14	Zinninger (77, 78)	1945	Pain at level of 12th rib posterior	Pancreatectomy Duodenectomy Splenectomy	Chronic pancreatitis Pancreatic lithiasis	30 hr.	None found at autopsy											
15	Brunschwig	1946			Carcinoma of	14 da.												

16	Brunschwig (79)	Probably 1946		Pancreatectomy Subtotal gastrectomy Splenectomy	Sarcoma—source unknown	19 da.	Perotinitis caused by leakage of gastro-jejunostomy		Not unusually severe									
17	Gaston (80)	6/ 5/47	Upper abdominal pain Constipation, jaundice	Pancreatectomy Duodenectomy Splenectomy Transverse colostomy	Adenocarcinoma, probably from papilla of Vater	8 da.	Peritonitis secondary to wound sepsis menia		10–30U Reg./day				Serum lipase Normal on 5th day					
18	Follis (67)	9/13/47	Jaundice, diarrhea, abdominal cramps. Diabetes	Total pancreatico-duodenectomy	Adenocarcinoma of pancreas; fibrosis of pancreas	11½ wk.	Intestinal obstruction Peritonitis	Pre-op.	24U Reg./day									
								22 da.	20U Reg./day	22.4	.93 gm. N_2	With pancreatin						
								8 wk.	25–30U Reg./-day				390		134			
19	Follis (67)	1/31/48	Diarrhea, jaundice diabetic 15 years	Total pancreatico-duodenectomy Splenectomy Cholecystostomy	Adenocarcinoma of pancreas arising in the duct system with metastasis to regional nodes	3 mo. +		Pre-op.	15U Reg./day				Serum lipase					
								1 day post-op.					1020	1.07	450		37	
								9 da.					645	.07	178		56	
								16 da.	5U P.Z.I. b.d. and Reg. p.r.n.				533	.37	235	52	13	
								46–48 da.		30.5	13.7 gm. N_2	With pancreatin						
								49–51 da.		11.6	13.4 gm. N_2	With pancreatin						
								52–54 da.		12.5	12.5 gm. N_2	With pancreatin						
								13 wk.	5U P.Z.I. q. A.M. and Reg. p.r.n.				593	1.25	210	43	0	
20	Greenfield (81, 82)	2/17/48	Weakness, anorexia, jaundice—mild, diabetes	Pancreatectomy Duodenectomy Pylorectomy Splenectomy	Adenocarcinoma of pancreas	21 mo. +		Pre-op.	Controlled by diet									
								15 da.	42U Reg./day	49	31							
								6 mo.	40U Reg./day day	34	36	Decreased about 10% with pancreatin	Plasma lipids fluctuated widely but 18-75 within normal limits					No retention
								18 mo.	40U P.Z.I./day									

DISCUSSION

In an attempt to correlate the differences in physiologic response in animals and man after pancreatectomy, it may be apropos to cite a curious fact. In partially depancreatized dogs and man the diabetes seems to be worse than in totally depancreatized subjects. Dragstedt (57) found that in dogs with 90–95 per cent of their pancreas excised, the insulin requirements were much more than in dogs after total pancreatectomy on a similar diet. He postulated that this may result from better absorption of foodstuffs with pancreatic juice present. Priestley (60) refers to a case at the Mayo Clinic where a partial pancreatectomy was performed for an islet cell adenoma, following which the patient required 60–100 units of insulin per day to control the diabetes. Goldner and Clark (63) noting that their patients required less insulin and were more sensitive to it than many diabetics, postulated that diabetes was caused not only by the lack of insulin but also that an insulin inhibiting mechanism may play a role. They further postulated that this factor may operate through an impaired pancreas and may be eliminated if the pancreas is entirely removed. Of course, if enough pancreatic tissue remains diabetes does not occur. Another vital factor in the degree of diabetes after total pancreatectomy may lie in the operative procedure itself. When the duodenum and stomach are removed, the physiologic alterations are fairly minimal but in combining their effect with the total loss of the internal and external secretions of the pancreas, one obtains a syndrome that is different in certain respects than that achieved in animals when the pancreas alone is removed. Perhaps this additional surgery is the answer to the diabetic problem and also to the difference in the blood and liver lipid changes in man and animals.

In animals, when the pancreatic enzymes are prevented from entering the digestive tract, besides the loss of fat and protein in the stool, a fatty liver and hypolipemia develops. These changes can be prevented by the addition of certain pancreatic factors to the animal's diet. Whether the factor is a lipotropic substance produced in the pancreas, or a lipotropic substance produced by the pancreatic enzymes operating on the ingested food, or whether there is another internal secretion of the pancreas besides insulin has not been proved. In man, however, it is known that in the absence of the pancreas or its enzymes, these changes do not occur. Although the patients for the most part do not receive pancreatic extracts in diets, their protection may be derived from the high vitamin content of their diet together with choline. This may suffice in man while in animals (12) these factors do not prevent a fatty liver but allow the animal to survive a long time. Another explanation for this curious fact in man is that there may be a factor in the foodstuffs which is neutralized by the pancreatic juice for the most part and thereby have no effect. If the pancreas alone were absent as in animals, this factor may be absorbed and cause a similar alteration in the blood and liver lipid content. However, in man with the duodenum and part of the stomach removed, this factor may not be activated or may not be absorbed without the gastric and duodenal secretions and therefore cause no ill effect. It will be of interest to note when a pure pancreatectomy is performed in man or a pancreatectomy, duodenectomy and subtotal gastrectomy is done in dogs, whether the same results are still obtained.

SUMMARY

1. Total pancreatectomy per se, is feasible in animals and for the most part certain results are obtained.

2. A totally depancreatized dog is a diabetic dog which can be regulated by insulin.

3. Without the pancreatic enzymes, fat and proteins are lost in the stool, but with an adequate diet this excessive loss can be compensated for.

4. All dogs develop a fatty liver, hypolipemia, and an almost complete loss of the esterified cholesterol in their blood plasma unless these changes are prevented by the addition of raw pancreas, pancreatic juice, lipocaic, choline or lecithin to the diet.

5. Total pancreatectomy in man is achieved only be removing the duodenum, a portion of the stomach, and in some cases the spleen.

6. The insulin requirement in man is much less than anticipated and the depancreatized man is very sensitive to insulin. This difference may be caused by the removal of other organs at the time of operation or by a new concept of diabetes. There may be present an insulin inhibiting mechanism in the pancreas.

7. The changes in the digestion of foodstuffs and the partial beneficial effects of pancreatic enzymes added to the diet are what one would expect in view of the experimental work.

8. The absence of change in the blood lipids and liver function studies are contrary to all experimental work. Whether a new factor in the diet is present or whether again the other organs removed along with the pancreas are the cause for this difference is not as yet known.

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THE "SIGN OF INTERLAMINAL TENDERNESS," AN IMPORTANT AID IN THE DIAGNOSIS AND LOCALIZATION OF INTERVERTEBRAL DISC PROTRUSIONS*†

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In 1934, Mixter and Barr (1), in their classic paper, established the relationship between herniated or protruded intervertebral disc and sciatic pain. Their experience has been so well authenticated by the many published reports of subsequent authors that the "Mixter-Barr" syndrome is now an established entity. To reduce the diagnosis to its simplest terms, one can say that recurrent attacks of low back pain associated with sciatica are caused by a protruded intervertebral disc until proved otherwise. There are obviously many variations which this statement will not cover, but it is an excellent point of departure in the diagnosis. Other conditions such as spinal cord tumor, spondylolisthesis, metastatic bone tumors, primary extradural sarcoma, tuberculosis of the spine and osteo-arthritis must be considered in the differential diagnosis. The diagnostic features of this disease in both typical and atypical cases have been well described by the many published reports. The purpose of this paper is not to re-emphasize or reiterate these diagnostic criteria but to call attention to a sign which we consider the most important single diagnostic aid.

Early in our experience with the surgical treatment of protruded intervertebral discs, we began to rely a great deal on the sign of "interlaminal tenderness" for both its diagnostic and localizing value. As with all clinical signs, it is not infallible, but it is certainly a most helpful aid. Without warning the patient as to the discomfort he might experience, very firm thumb pressure is applied over each interlaminal space in the lumbar region. (Figure 1.) The patient should be as relaxed as possible and lying in the prone position. The firm thumb pressure is applied a finger's breadth lateral to the interspinous space. Where there is underlying intervertebral disc protrusion, the patient will experience pain which is almost directly proportional to the degree of root pressure. In the majority of cases, pain will be felt only at the sight of pressure. Not infrequently, however, the patient will volunteer the information that when the pressure is applied, pain is felt in the affected extremity also. Where there is a marked degree of root compression at one space, there may be a lesser degree of pain at the space above or below the one being tested, but the point of maximum intensity should be considered as the localization. In several cases, an equal degree of pain was elicited at two spaces and at operation, ruptured discs were found at both spaces.

In a recent follow-up analysis (2) of 364 cases of protruded intervertebral discs covering a 6½ year period, the accuracy of this diagnostic sign was evaluated. In the 364 cases, the test was applied in 284. In these latter cases, interlaminal tenderness was present in 235 and absent in forty-nine, thus indicating the presence of inter-

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vertebral disc pathology in 83.7 per cent of the cases tested. It should be stressed that intervertebral disc herniation may occur without interlaminal tenderness. In the 235 cases in which the sign was positive, correct localization to the space involved was found in 174 or 74 per cent. An error in localization was seen in 61 patients or 26 per cent. Sources of error are the difficulty in determining with certainty the exact space being tested in muscular and obese persons and the misinterpretation of a minimal degree of interlaminal tenderness. The sign has been found to be of considerable value in cases where the history and physical findings are atypical. Many patients were tested who did not complain of and were unaware of the presence of a localized area of back tenderness.

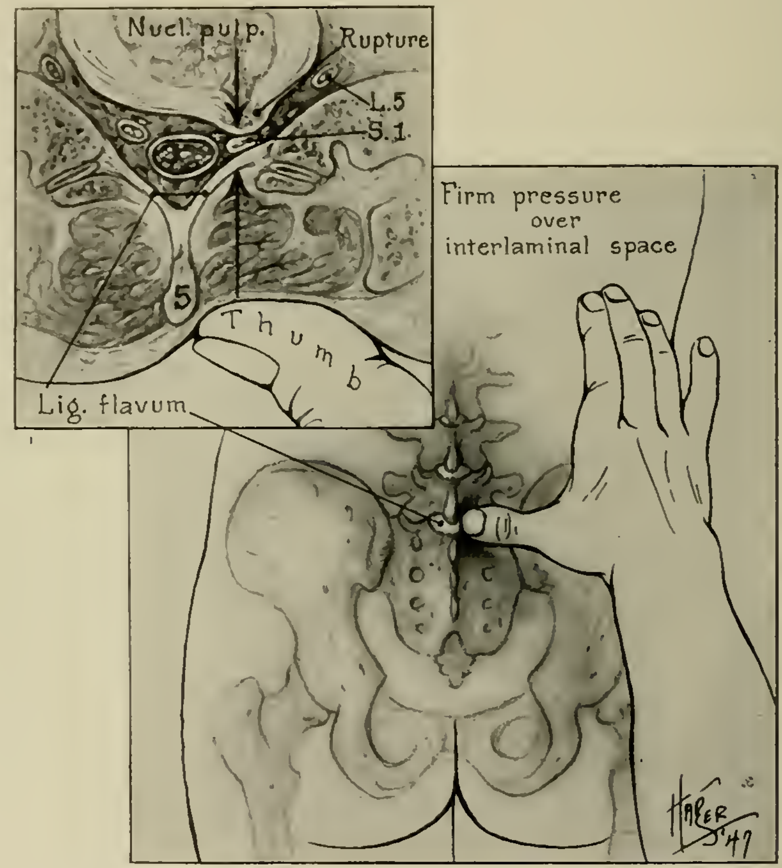

FIG. 1. Composite drawing showing position of thumb in eliciting interlaminal tenderness. Upper left hand drawing shows the anatomic relationships of herniated disc and nerve roots when exposed to digital pressure.

SUMMARY

1. "Interlaminal tenderness" as a diagnostic and localizing sign in protruded intervertebral disc is described.

2. As a diagnostic sign, interlaminal tenderness indicated the presence of disc pathology in 83.7 per cent.

3. As a localizing sign, it was found to be 74 per cent accurate.

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THE AIRLINE PILOT—HIS PHYSICAL MAINTENANCE*

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All aviation medical examiners, as well as those with broader training and popularly known as Flight Surgeons, are keenly aware of their responsibilities regarding safety aloft. They strive conscientiously to select for a flying career only men who are at the peak of physical perfection in accordance with the highest physical standards that could possibly be devised and met.

Such scrupulous selection, along with expert flight training, goes far towards mitigating the problems which confront the specialist in aviation medicine in his efforts to keep careful watch over the physical fitness of a pilot to the end that he may always be equal to the flying mission assigned him, inasfar as physical efficiency is concerned.

In no other calling does the old adage about a sound mind in a sound body have so much significance, if the interests of safety are to be adequately served.

Success in keeping a pilot physically fit for the performance of his duties over a flying career of, let us say, around 30 years, depends chiefly upon the thoroughness with which his routine physical check-ups are conducted at regular and frequent intervals. Also important is an unremitting supervision over the environmental and hygienic aspects of his work, in order that he may always be protected against deleterious influences likely to impair his health.

The value of a periodic physical examination of one presumably in good health was demonstrated long before aviation attained its present eminence; but it took flying and its requirements to emphasize the importance of the periodic check-up as a means of keeping physically fit.

Even though we do get off to a good start with carefully selected flying personnel who are physically fit in every respect, it must nevertheless be remembered that such men are not wholly immune to the same dangers and difficulties involving health which confront workers in other fields of endeavor. Pilots can have headaches, backaches and bellyaches, even as you and I. They can suffer from fatigue and their hearts, lungs, and nerves can get out of order, just as in the case of any other man who works. Unlike many business men, however, the pilot fully appreciates the value of periodic examinations as a means of keeping such unwelcome visitations at a minimum. Moreover, he does not need persuasion to follow out any corrective measures recommended. As a result, the morbidity and mortality rates of his group are among the lowest cited. His own experience and that of his fellow workers has taught him that corrective measures do become necessary from time to time as a means of health conservation in terms of preventive medicine. In aviation medicine, it is axiomatic that a man can be kept in good health just as a machine can be kept in good running order, only by routine check-ups made at a time when there is obviously nothing wrong.

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The early detection and correction of minor deviations from the normal before they can gain a foothold and become serious are extremely important. Nature has a way of setting up warnings to signal difficulties ahead and a careful examiner will not ignore them. The laboratory is his sheet anchor.

In aviation's efforts to keep its pilots mentally, physically and temperamentally fit for their chosen career, the basic principles involved are the same in military as in commercial aviation. However, the environmental stresses to which military and commercial pilots are subjected are by no means comparable. Those of the latter are much less exacting. Since the health conservation measures followed out by the Medical Department of United Air Lines are similar to those now being observed on other major air lines of this country, I will take the reader behind the scenes and briefly describe the medical set-up and work of my own company.

United Air Lines flies a fleet of 150 air transport planes over a transcontinental route extending from Boston and New York to San Francisco, thence to Honolulu. Another route extends up and down the Pacific Coast. It serves and has its employees stationed in 80 cities along its 10,700 miles system, but its pilots are domiciled only at seven key-points designated for the routine operation of its planes.

Medical Department branches completely equipped and adequately staffed with full time personnel are maintained at Chicago, Denver and San Francisco. At all other stations along United's airways system, fully qualified part-time examiners and consultants are employed. Practically all of the pre-employment and periodic examinations on flying personnel are conducted either in the Chicago, Denver or San Francisco Medical branches.

THE PRE-EMPLOYMENT PHYSICAL EXAMINATION

After his technical proficiency, intelligence, aptitude, character and moral qualifications have been passed upon and found to be satisfactory by other departments concerned, the pilot applicant is sent to the Medical Department for his pre-employment physical examination. There, the applicant first answers a questionnaire which delves deeply into his activities up to date, with special emphasis on medical history, past and present. This questionnaire, along with the work sheet on which the results of his physical examination are recorded, starts his health record, should he be employed. Subsequently everything pertaining to his physical record throughout his period of employment goes into this health record file. Questionnaires covering the gap since the last physical examination also form a part of each periodic or special examination subsequently conducted.

Sense Organs. The physical examination usually starts off with the eye examination, because it is in that field that most causes for rejection are encountered in a pre-employment examination. The eye examination embraces about 20 steps, starting with the determination of the sighting eye and ending with a night-vision test. Color vision must be normal and visual acuity and muscle balance readings must be within the prescribed acceptable standards. The ear examination includes a test as to the patency of the eustachian tubes and an audiometer determination conducted in a soundproofed room.

The nose and throat examination includes a test for the sense of smell and a transillumination of the sinuses. A superficial dental examination is also performed to determine whether there are any indications as to the need of expert attention at the hands of a dentist.

In the general examination careful inquiry is made of each examinee as to any worries regarding domestic, financial, health or other troubles which might have a bearing on his physical condition. This applies to all examinations, in recognition of the fact that worries and flying are not compatible. Weight is carefully compared with the standard weight for one of the examinee's age and height. A vital capacity determination is made, followed later on by breath-holding tests and in some instances a tilt-table test. The rectum including the prostate is examined routinely.

The Schneider index test, long an institution in aviation medicine as an indicator of circulatory efficiency and a talking point among all pilots, may not be familiar to some who are acquainted with the latest developments in exercise test equipment and procedures. It includes the following factors: pulse rate reclining, standing, and immediately after exercise; elapsed time in seconds for a return of the pulse after exercise to the standing normal rate; systolic blood pressure reclining and standing. (Although they do not enter into the Schneider index rating, most examiners also take diastolic readings reclining and standing, because of their importance.) The highest possible score in the Schneider index test is a plus 18. The average pilot will score around 14, which happens to be approximately the same score as will be found in any group of college athletes. The test is based on the knowledge that certain cardiovascular changes commonly occur as a result of fitness incident to athletic training and that these changes are reversed from lack of exercise or from fatigue or disease.

Heart. The examination of the heart includes an initial electrocardiogram, irrespective of the age of the examinee. If normal, rechecks are made every three years thereafter without any intervening indications.

Nervous System. The examination of the nervous system is given careful attention. It includes determination of station, gait, reflexes, coordination, psychomotor tension, tics, tremors, carotid-sinus irritability, and a thorough search for evidence of epileptoid equivalents. A history of any fainting episodes is looked upon with suspicion and carefully evaluated. Reaction time is taken routinely and a basal metabolism rating is made whenever indicated.

Laboratory Examinations. The wisdom of a wide range program and thoroughness of procedure cannot be too strongly stressed. The urinalysis includes a microscopic examination in all cases. The blood examination is complete and includes, along with a serologic test for syphilis, a blood typing for record purposes, using the Landsteiner international classification. (The examinee is informed as to the result and advised to note his blood type on his flying certificate or any other card ordinarily carried on his person in his bill-fold.)

Lungs. A chest roentgenograph is taken routinely in all cases, and tabulated with any other roentgenologic findings which are indicated by reason of the examinee's past medical history. This particularly applies to a history of any head injuries. In his searching examination the medical examiner must be constantly on guard against overlooking potential foci of infection.

Upon the conclusion of the pre-employment examination, if he has successfully met the prescribed standards, the pilot then meets with the Medical Examiner in his office for a discussion of the findings, especially those in which there appears to be room for improvement through corrective measures, and also to permit of an appraisal of the examinee's personality make-up so as to exclude the possibility of a preponderance of traits which might be objectionable and which might alone constitute a cause for rejection. (The same type of conference between examinee and examiner follows each periodic examination, with special emphasis on all deviations from the normal and any corrective measures indicated.)

THE PERIODIC PHYSICAL EXAMINATION

Having been employed as a result of satisfactorily meeting the physical standards, a pilot then becomes subject to the periodic physical check-ups which are so essential in keeping him physically fit. In addition to the company examinations a pilot now takes an examination at the hands of a medical examiner for the Civil Aeronautics Administration every 6 months. If he is a member of the Air Force or Navy Reserve, he must also successfully pass the Air Force or Navy examination as the case may be.

The principal object of the periodic physical examination is the conservation and promotion of health. Therefore, the examination must be thorough and in deviations from the normal all recognized diagnostic procedures are used in an effort to determine the character of incipient or obscure defects which impair or which may develop into conditions likely to impair the health and usefulness of the examinee. When such abnormalities are discovered, the medical examiner makes suitable recommendations for the institution of corrective measures.

As regards company requirements, each pilot must take a searching and thorough general physical overhauling at least once a year at the hands of the company medical examiner, and oftener whenever such action is indicated. Some pilots, because of deviations from the normal which require watching while the pilot is still on a flying status, may require a check-up at least once a month. Of particular importance is the fact that no pilot who has been absent from duty because of sickness or injury, even if he has missed only one trip as part of a day's work, is permitted to resume flight duty until he has been examined and has obtained a medical clearance as to his physical fitness.

Any pilot whose health becomes a source of concern to himself can report for an examination at any time. Moreover, supervisors with whom the pilot comes into contact in preparing his flight-plan for a trip can also send him to the Medical Examiner for an examination should they, as a result of their observations, believe he is not up to his customary physical par. This is not to be interpreted to mean that the Medical Department and its examiners serve as attending physicians in such cases. On the contrary, all pilots are encouraged to establish a family-physician relationship.

When defects needing correction are detected during the course of a Company examination the examinee is given a copy of the findings and advised to consult his family physician regarding them. On the other hand, if the case or if the defects or conditions are of a type that warrant attention at the hands of a specialist, the examinee is given the name of a suitable specialist from an approved panel kept in the Medical Department and advised to consult him.

Every detail regarding physical examinations, absenteeism from work because of sickness or injury, whether it be occupational or non-occupational, as well as treatment carried out, is made a part of the pilot's health record. The cause and duration of sickness and injury absenteeism is the subject of a report to the Medical Department and is studied carefully in connection with findings in the special examination which is a prerequisite for return to duty. Over a period of years, the health record on file in the office of the Medical Director furnishes at a glance any ups and downs from the mean health range of the case under consideration. Such comparative records are invaluable in quickly pointing out the need for further investigation and possibly the early institution of corrective measures. The results of each examination must be carefully compared with previous ones in order that progressive changes if present may be brought to light and receive attention.

In both the routine pre-employment and periodic physical examinations, the importance of a urologic or gastro-intestinal roentgenologic examination, whenever indicated, cannot be too strongly emphasized. If there is any one feature which may be overlooked in a general physical check-up among those who believe themselves to be in fairly good health, this is it. Of course, such examinations cannot be done routinely. A careful inspection of the questionnaire, however, and a searching discussion with the examinee will sometimes bring out a train of vague symptoms indicating the advisability of additional laboratory check-ups.

As a matter of fact, exhaustive laboratory examinations during periodic check-ups, even if they cannot be done regularly, should be made at alternate periods. By such means peptic ulcers, renal calculi and other conditions requiring attention can be detected and corrected in advance of subjective symptoms. Along towards middle life complete laboratory check-ups as part of the periodic examination regime play an important role in detecting early degenerative changes.

As predictors of possible trouble far ahead of symptoms we already have added or are planning to add new procedures to our screening battery, notable among which are the new *Krasno-Ivy flicker fusion photometer*, electrocardiographic recordings of the exercise tolerance test, and biochemical determinations of an entirely new character.

THE PHYSIOLOGIC AND PSYCHOLOGIC CHARACTERISTICS OF AN AIRLINE PILOT

A survey of the health record file of United's pilots, now numbering 756, discloses some generalities, believed to be typical of all airline pilots, of interest in connection with the program of keeping them fit for work. A few highlights in this interesting field of observation might be mentioned.

Most of our pilots appear to be youthful in physiologic age in relation to the test norms for their chronologic age.

They smoke on the average of one package of cigarettes per day. (This could be considered excessive were it not for the fact that most of them fit into a habit pattern, because of the exactions of their work, which permits of only a puff or two before the cigarette is discarded.) A very small amount of alcohol is used by pilots—a healthful tendency. Pilots are very conscientious in following a company directive which prohibits indulgence in alcohol within 24 hours of a flight. Many pilots do not use alcohol in any form. It is well known that alcohol impairs the functioning of the central nervous system and that these effects tend to be accentuated by the diminished partial pressure of oxygen at high altitudes.

In United's pilot group a wide range of physical "types" are encountered, although the majority tend to fall into a common type. Many different varieties of physique, even at the extreme ends of the distribution curve, will be found among pilots who are successful airmen. The average pilot in United's group has many of the characteristics of the athlete and belongs to the pyknic type rather than the asthenic in terms of Kretchmer's classification. In other words, they are, on the average, rather stocky, phlegmatic individuals as contrasted with thin, angular, and excitable persons.

A large percentage of the pilots have slow pulse rates, low blood pressures; many are slightly overweight, with rather slow metabolism and rather low voltage in the electrocardiograms. It is well recognized clinically that these characteristics are often observed in the same individual who has a tendency toward low metabolism. The slow pulse rates, the moderate responses to, and rapid recovery after, mild exercise, as disclosed in Schneider and other exercise tests, and the tendency to low normal blood pressure are interpreted as favorable signs of neurocirculatory fitness. These characteristics are also frequently found in the so-called pyknic or "viscerotonic" person with psychologic traits of emotional warmth and relaxation as contrasted with the asthenic or "cerebrotonic" person who tends to be inhibited, tense and overreacting.

Also observed is a wide range of personality "types" among these healthy and successful pilots, but the average person in the group appears to be stable and dependable rather than flighty and excitable. The popular conception of the aviator, carried over from World War I and unjustifiably into World War II, as a hell-raising, audacious, care-free individual is fallacious and certainly does not apply to airline personnel. On the contrary, the pilots in United's group appear to be well poised and emotionally stable with many of the psychologic characteristics found in a group of professional men intent on mastering a chosen field of endeavor. There is an absence of vivid or dramatic personalities, of so-called temperamental or artistic types, or of unusually brilliant persons. It is recognized that individuals with these traits are apt to be undependable. Under the stress of examination only rarely does an examiner observe reactions which are frequently found in the emotionally unstable, such as unusually moist palms, excessive perspiration, dilated pupils, tremor of the fingers and eyelids, and marked variations in pulse rate, respiratory excursions, and blood pressure.

The older pilots in our group do not show as great a decrease in vital capacity and in tidal air volume as is usually observed in older age groups. In general, their pulmonary ventilation and efficiency measure up to quite high standards.

The popular conception that pilots have exceptionally defective hearing is not substantiated by audiometer tests. No advanced degree of occupational deafness exists. This holds true even among the older pilots who, early in their careers, were exposed to the noise of motors and propellers for many hours of flying in planes with open cockpits. There is a gradual decrease in hearing acuity for the higher frequencies with increasing age, but these changes are not significantly greater than those which have been observed in comparable age groups in the non-flying population.

In our large group of airline pilots, there is more evidence suggestive of acclimatization than of deterioration in relation to flying. The older pilots show no signs of premature ageing and infrequent symptoms of physiologic deterioration. On the contrary, they show certain characteristics suggestive of acclimatization, such as high red-cell counts, slow resting pulse rates, low systolic blood pressures, large tidal air volume and a vital capacity which does not show as great a decrease with age as is usually the case, as well as a tendency toward moderate or slow respiratory rate and regular breathing patterns. Certain of these physiologic characteristics are frequently observed in athletes and not in men who are ageing prematurely or deteriorating physically.

Piloting a modern airplane does not necessarily demand a person of unusual physical make-up, but only normal men who are well endowed mentally and physically with emotional traits of stability and poise. All this may be necessary for handling occasional situations which demand quick thinking and good judgment. As planes have become larger, with additional members in the crew, and as aids to navigation for operating under adverse conditions have been improved, the stresses confronting the pilot have been ameliorated rather than intensified. Under present operating conditions, United's health records disclose that pilots who live hygienically with due regard to rest, play, exercise, and diet, and are moderate in the use of tobacco and stimulants may be able to maintain a high degree of efficiency until 60 years of age or longer. Pilots are impressed by the good which they derive from regular exercise and good hygiene in preventing premature ageing and in maintaining a high degree of physical and mental fitness until they reach retirement age, which in the case of pilots on United Air Lines is mandatory at 60, and optional beginning at 50. One in close contact with airline pilots cannot escape the conviction that flying per se does not give rise to premature ageing in those individuals who are temperamentally and physically well suited to that vocation.

To the end that a healthful environment may be assured the pilot and his co-workers, a broad sanitary and hygienic supervision over all Company activities is constantly maintained. The causes and prevention of pilot fatigue are being constantly studied, with a view to improving conditions in the cockpit and making work there more comfortable. Under federal regulation an airline pilot is not permitted to fly more than 85 hours per month or 1000 hours per year. Even with that safeguard the schedules he flies, and the regularity of his meals, sleep, and recreation must be given careful medical scrutiny.

While the health, efficiency and safety of flying personnel are matters of primary consideration, the mental alertness and physical fitness of dispatchers, radio men, crew chiefs, and all other ground workers, are of equal importance. For that reason, all airline employees are given practically the same type of pre-employment and periodic physical check-ups as is required of pilots with, of course, a less exacting application of standards. This policy is in keeping with the principle that safety will be promoted and accidents prevented if all personnel, ground as well as flight, are mentally alert and physically fit.

The importance of selecting the right man for the right job, based on a reciprocal analysis which takes into consideration the physical status of the employee on the one hand, and the requirements of the work he is to perform on the other, cannot be too strongly stressed.

In this discussion of pilot fitness I do not wish to convey the impression that the relationship between the pilot and the medical examiner is always a bed of roses. Diseases and injuries take their toll despite all one may do in his efforts to prevent or remedy them. Consequently, in their daily work, medical examiners do encounter an occasional problem which, in the interests of safety, necessitates the permanent grounding of a flyer as the only reasonable solution. Like the rest of us, pilots are only human. In a laudable effort to keep physically fit they may, and in most instances do, lead cleaner and better regulated lives than most of us. Nevertheless, in some cases, fortunately rare, there comes a time when they become the victims of a disability that cuts short their flying career. All airlines have similar cases, and it is a painful duty when a medical director responding to the dictates of his conscience, has to take timely action that suddenly and irrevocably dislocates a man from his chosen career. In that connection it must be remembered that when medical examiners and operations executives keep a man on the ground it is because they believe he would be unsafe in the air. When they let him fly, they stamp him as safe.

From an airline standpoint, we find it necessary at times to stress the fact that there is a vast difference between the operating principles of military aviation and commercial aviation as practiced today.

Military aviation, of necessity, must be at all times a vast experimental laboratory. For that very reason military aviation has to do things that cannot be countenanced in commercial aviation. Military aviation must continue to try out and, if possible, do the daring and spectacular maneuvers necessary in making our Flying Forces equal to, if not better than, the air force of any other nation. For that very reason, it must continue to carry on with that objective in mind. On the contrary, commercial aviation is conducted along conservative lines, with the safety and comfort of its passengers a primary consideration. Commercial airlines do not subject either their crew or passengers to extreme altitudes, to excessive rates of ascent or descent, to power dives, to sharp banks and turns, and to a lot of the other acrobatic maneuvers that go hand in hand with some phases of military aviation. In order to achieve and maintain supremacy in the air, military aviation must, at times, subject its airmen to physical stresses close to the limit of human endurance. This means that aeromedical research in the Armed Forces must be conducted with a clear view to safeguarding the interests of the human side of military or naval flying.

In the attempts of research workers to fathom some of the recognized problems and find their solutions experiments conducted for the purpose of assembling scientific data are discussed at various medical meetings. Unless the speaker takes the precaution to stress the fact that the findings and conclusions being presented have absolutely no bearing on commercial aviation, the alarming features of many of these reports are interpreted by newspapermen and others as having general application to flying. Consequently, they seriously shake, if not actually retard, the development of air-mindedness on the part of the traveling public.

Of course, in commercial aviation as in military aviation we do have our selection problems. But ours are minor compared with military aviation because most of our fliers have been trained in Air Force or Navy Flying Schools, or in some of the splendid civilian schools now in operation. On an airline, our major problem is physical maintenance. And, fortunately, because of a wise selection from the above mentioned sources, I question if there is a group of professional men anywhere who live as cleanly and who strive to keep themselves mentally alert and physically fit as do our airline pilots. I am also happy to report that the relationship between the commerical pilots and their airline Medical Departments is one of reciprocal confidence.

In keeping our airline pilots physically fit we attempt to detect deviations from the normal early enough to "nip them in the bud," and take care of them before they can grow and become serious enough to disqualify for flying and cut short a chosen and highly remunerative career. In United Air Lines we have had nothing but cooperation from our flight personnel. In my talks with the medical directors of other airlines the same situation appears to hold true for them. Emphasizing, as we do, the value of preventive medicine, pilots are now going out of their way to express appreciation for what the airline medical departments are trying to do for them in order to keep them on the job as safe and efficient fliers.

We strive to do everything possible to maintain our airline pilots in a high state of physical efficiency so as to prolong their flying careers because for every year they fly they are acquiring experience and developing judgment which can be put to good use in any emergency situation that may confront them aloft.

In general we find no evidence of premature ageing among our commercial pilots. In certain of the sensory tests, there is a constant diminution in acuity with age; the critical ratios being highly reliable in the tests for range of accommodation, light sensitivity and auditory acuity. The extent of these changes with age, however, are in most cases less than usually observed in the average male population. It is our impression, therefore, that flying in itself does not give rise to premature ageing in those individuals who are temperamentally and physically well suited to this vocation.

As many a fine, upstanding, college youth with his heart set on becoming a pilot has learned to his bitter disappointment, only one in four applicants, according to the past peace-time records of our air force can meet the prescribed physical standards. Even when they do get over that first hurdle and begin to train, only one in two is able to qualify as an efficient aviatior. In short, of all those who apply for flying training in the Armed Forces, only one in eight attains the cherished goal of pilot. Such screening spells selection in any language.

After careful discrimination, the next and most difficult job of the flight surgeon is to keep a careful watch over the physical fitness of pilots so that they may always be equal, in so far as physical efficiency is concerned, to the flying missions assigned them. With regard to selection, in which flight surgeons reject about 75 per cent of all applicants who appear before them, we are still conducting extensive research in order to enable us to select the very best material available from the standpoint of flying adaptability. After 30 years of trial and error development, flying has now reached a high plane of efficiency. And yet in an effort further to promote safety and still push forward to new heights of achievement, research on the human side is going on all the time. We are continually striving for a better biologic "yardstick" on which to determine the characteristics of the good pilot as well as the poor pilot. This is an important feature relating to safety and prolonging the usefulness of a pilot's career. A number of university research staffs are intensely interested in this problem and are participating in the investigation along with federal agencies and the airlines themselves. In so far as judgment and other psychologic considerations are concerned in the selection and maintenance of the flyer, it is much easier for the flight surgeon to put his finger on undesirable traits that ordinarily preclude, rather than to draw a pattern of psychologic behavior predicting success in flying. However, in our original examination for flying we do attempt to appraise and assign a value to such factors, in keeping with standard psychologic and other practices.

The airlines have a special interest in these selection safeguards and the early elimination of the unfit, for the reason that many of their pilots are recruited from the graduates of the Air Force, Navy, and other training schools that look at their yard-sticks twice before placing the stamp of approval on their flying products. Thus the airlines know that the pilots who join them with such training represent the survival of the fittest.

In the past twenty years I have been so situated as to see much of what proper selection means towards the promotion of safe flying. While at Randolph Field, Texas, as the Commandant of the School of Aviation Medicine, I saw, in end-results, the shattering of hopes to seven out of eight flying aspirants. Now with an airline, I meet some of those who successfully negotiated the training course. I happen to know they deserved the wings they won. The vast majority of our airline pilots are men of the highest calibre—mentally, morally, physically, and in technical proficiency.

A cross section of them as a group would reveal an excellent specimen of manhood; to wit: a pilot who is able-bodied, intelligent, of good habits, with an outstanding facility of self-criticism; a flyer who has a pleasing yet rugged personality and who knows the meaning of discipline; an aviator who is cheerful, alert, energetic, and finds pleasure in his work; an airman who is trained; has good judgment, and no easily aroused emotional complexes; a flying man who is health conscious and cooperative in that respect to a degree not encountered in any other walk of life. In short, in our cross-section we find a sample of the genus Homo that should bring joy to the heart of any enthusiastic worker in preventive medicine.

CLINICO-PATHOLOGIC CONFERENCE

From the Case Histories, University Hospital, Baltimore

CLINICAL HISTORY

First Admission

R. D., a colored male infant, age 12 months, was brought to the University Hospital Accident Room on July 2, 1949, with labored breathing and fever of one and one-half days duration.

The baby had become restless and had developed an expiratory grunt. Because of this and dyspnea, he was unable to take his bottle. He seemed to breathe more laboriously at night. He was given a dose of "Castoria" the evening of admission and immediately became dyspneic and "limp." He was revived after 5 to 10 seconds by artificial respiration and taken to a local physician who administered a dose of coramine and referred him to the accident room. A shallow and non-productive cough was not evident until the night of admission. There had been no vomiting, diarrhea or evidence of exposure to poisons.

Past History. The patient was born at University Hospital June, 1948 after an eight months gestation. His birth weight was 4½ pounds. Because of prematurity and failure to gain weight, he remained in the hospital for three months. Following discharge he failed to tolerate solid foods but took milk well. He was not given vitamin D or C prior to admission. He began to sit up at the age of 12 months and his mental development appeared to be normal. His father had asthma. No other significant familial diseases were reported.

Physical Examination. The patient was a well nourished, 12 months old negro who seemed to be acutely ill with a temperature of 99 F.; pulse, 120 per minute; respirations, 30 per minute. Respirations were rapid and accompanied by a loud expiratory grunt. There was paleness and cyanosis of the conjunctivae. There was evidence of restlessness, irritability and yet an alertness. An inflamed pharynx was noted and dullness was ellicited over the posterior aspect of the right lung. There was also a decrease in the intensity of breath sounds in the same area. An examination of the heart revealed a regular rate, rhythm and normal sounds. There was no enlargement.

Roentgenographs of the chest showed opacity of the entire right lung and upper lobe of the left lung which was interpreted as consolidation. The blood Hemoglobin was 27 per cent; the volume of packed red blood cells was 17 mm.; the white blood count was 30,000 per cu. mm. There was no skin reaction to a centesimal dilution of old tuberculin. It was the impression of the staff that the child had a pneumonitis at the base of his right lung accompanied by a severe anemia.

He was given 80,000 units of penicillin each three hours, oxygen by tent, liquid diet and blood transfusions. At the time of his discharge from the hospital, he was judged to be in good condition.

Second Admission

This child was again brought to the University Hospital Accident Room at 4:30 P.M. on August 11, 1949. Again he was in need of oxygen therapy because of respiratory distress. At this time he was accompanied by an uncle who gave the following history. The child had suffered a head cold for two days, accompanied by high fever and shortness of breath which appeared on the day of admission.

A physical examination restricted to the chest and heart revealed a well developed, well nourished 13 months old colored male in acute respiratory distress. There was retraction of the chest wall and there were signs of consolidation in both lung bases. Crepitant rales and rhonci were heard. Breath sounds were diminished bilaterally. The heart rate was rapid.

Roentgenograph of the chest showed almost complete clearing of the homogenous, patchy infiltration of the entire right lung and of the upper lobe of the left lung as seen during the previous examination on July 3, 1949. There was residual patchy infiltration in the medial portion of the right lung and in the mid-portion of the upper lobe of the left lung. The diaphragm and bony thorax were normal.

He was given 200,000 units of penicillin, oxygen therapy, alcohol sponge baths, cold water enemata and 50 per cent glucose intravenously. Death occurred on the day of admission. Clinical diagnosis was bilateral bronchopneumonia.

CLINICAL DISCUSSION

Dr. Spraggins: Reviewing the patient's history briefly, we find a premature infant of 4½ pounds with a prolonged initial hospitalization of 3 months because of feeding difficulties. Throughout the first 12 months of life, he could not tolerate solid food. Associated with this was retarded neurologic development. At the age of 13 months, there occurred a sudden onset of respiratory disease, of which the outstanding aspects were infection, expiratory distress and physical signs showing limited involvement of the lungs but roentgen findings of extensive involvement. Our only laboratory findings were of extreme anemia associated with a marked leukocytosis. We know nothing of the progress of this illness except that the infant was apparently discharged, to be readmitted 1 month later with similar but more critical symptoms. The outstanding difference between the two episodes of acute illness is in the roentgen findings. On readmission, in spite of critical respiratory distress, the lungs were relatively clear.

To incorporate all of the findings under a single diagnosis would be difficult but the history of feeding difficulties associated with expiratory distress prompts one to think of a combination of the tracheal and esophageal obstruction. This would suggest the possibility of a double aortic arch surrounding the two tubes. This seems unlikely. I much prefer to accept the hazardous diagnostic approach of suggesting multiple etiologic agents. In the face of prematurity one can more readily visualize feeding difficulties and delayed neurologic development; a child with a damaged central nervous system caused either by birth trauma or by congenital defect. The anemia may be explained on the basis of iron deficiency as a result of poor diet.

The presenting symptoms of respiratory distress point to such diseases as interstitial pneumonia, bronchial asthma, foreign body, aspiration pneumonia, congenital cystic disease of the lung, and mediastinal tumor.

Interstitial pneumonia is common in infancy, is sudden in onset, and may be extremely severe. Of those etiologic agents causing this pathologic change, one would think acute bronchiolitis or atypical pneumonia to be most likely. Aspiration pneumonia seems unlikely except as a complicating factor. The infant is known to have ceased breathing following a dose of Castoria after having had symptoms of respiratory disease for several days.

Bronchial asthma cannot be eliminated. Although rare in infancy, it usually exists in its most severe and fatal form if untreated. The family history of allergy is in favor of such a diagnosis. The rapid onset of severe symptoms, the presence of infection as an initiating factor, the extensive pulmonary involvement on the first admission with little involvement of the second, and the paucity of findings on percussion and auscultation makes this possibility very attractive.

Congenital cystic disease of the lung and mediastinal tumor seem very unlikely in the absence of roentgenographic findings suggesting them. Foreign body in the respiratory tract cannot be eliminated but seems unlikely because the child's symptoms apparently disappeared between the two episodes.

Congenital heart disease as a possibility has not been included in the discussion because of the lack of clinical symptoms pointing to this disorder. Also, the roentgenologic aspects suggest that the heart was not of size sufficient to produce tracheal or bronchial obstruction by pressure.

None of the above categories satisfactorily explains the type of exodus of the child for this death seems to be the result of overwhelming infection which could have occurred secondary to the basic pathologic findings. In my opinion, this child suffered the effects of interstitial pneumonia or bronchial asthma.

Dr. Minor: Could we explain this patient's course on the basis of cystic fibrosis of the pancreas?

Dr. A. H. Finklestein: May I point out that this child had been a difficult feeding problem since birth, and that he had not tolerated solids well, but relished cow's milk. Now the question arises—what was the cause of this difficult feeding problem? Could it be a congenital anomaly, or anemia; or prematurity accentuated by a lack of foods other than the milk formula? The absence of a history of vomiting and diarrhea, the lack of respiratory infections prior to the first admission, and his willingness to take milk will certainly rule out cystic fibrosis of the pancreas. We do not know whether his nutritional status was normal at the first admission, but we do know his mental development was normal.

The striking feature in this case is the attack of pneumonitis which was apparently bronchopneumonia. Judging from the high white blood count it must have been bacterial in origin. We also note that he responded well to penicillin. At the time of his discharge after the first admission, the patient was found to be "in good condition." However, one asks, "were his lungs clear at that time?"

On August 11th, he was readmitted with findings of lung disease. There is no notation of cardiac dilatation, weak pulse, enlargement of the liver, or of pulmonary edema. Yet, the child died suddenly. One wonders whether he had a relapse of interstitial bronchopneumonia which did not clear from the previous admission, or whether he suffered a new infection.

I would like to emphasize the fact that any child who is not progressing normally during the first six months of life should have an investigation of the genito-urinary tract to rule out congenital anomalies there.

Another point is that the negative tuberculin test and the clearing of the lesion noticed on the first admission would rule out pulmonary tuberculosis.

My final impression is that this child died of cardiac failure secondary to bronchopneumonia.

PATHOLOGIC FINDINGS

The body was that of a colored male approximately 2 years of age that showed good nutrition, one-plus rigor mortis, moderate abdominal distention and no edema. The pupils were equal. A serosanguineous fluid drained from the nose and mouth. The body measured 75 cm. in length.

The body was opened through a "Y" type incision. The entire intestinal tract was distended. The diaphragm was intact. A very small amount of clear peritoneal fluid was present. On opening the chest 100 cc. of a clear greenish amber fluid was found in each pleural cavity. The pericardial cavity contained 50 cc. of clear amber fluid. There was considerable abdominal and mediastinal lymphadenopathy.

The heart weighed 120 grams and appeared enlarged in its transverse diameter. The chest diameter was 14 cm.; the transverse diameter of the heart, 7 cm. The pericardial surface was smooth and glistening. The ductus arteriosus and foramen ovale were closed. The valves showed no anatomic abnormality. The tricuspid valve measured 7 cm.; pulmonic, 4.5 cm.; mitral, 5.5 cm.; and aortic, 3.5 cm. The right ventricular wall measured .5 cm. in thickness; and the left ventricular wall, .9 cm.

The endocardium, when examined microscopically, was seen to be greatly thickened by dense connective tissue. A similar condition was observed in the pericardium. Weigert's connective tissue stain differentiated abundant elastic and white fibres. It was upon the endocardial thickening and elastosis that a diagnosis of endocardial fibroelastosis was based.

The left lung weighed 100 grams. The right weighed 150 grams. Each lung occupied about one-third of the pleural cavity. The right lung showed a smooth pleural surface. The upper lobe was hemorrhagic and mottled. A cut section through this lobe revealed a rather confluent patchy consolidation. The lower and middle lobes were subcrepitant and exuded abundant frothy material. The left lung also showed a smooth pleural surface and a mottled hemorrhagic color. The lower lobe exuded frothy material.

Study of the lung sections found characteristics of congestion and edema. There was no evidence of pneumonia. The spleen was normal. The stomach and duodenum were empty. The gastric mucosa appeared atrophic. The sphincter of Oddi was patent and emitted bile. The pancreas weighed 20 grams. Its size, shape, and construction were normal.

The intestines were patent throughout their length and showed moderate distention. The mesenteric vessels were patent. The liver and gallbladder weighed 350 grams and were normal except for mild congestion. The adrenals were of normal size and shape. A cut section revealed normal construction.

The kidneys were of normal size and shape. The right kidney weighed 40 grams and the left, 30 grams. Both kidneys showed a normal formation.

The bladder was of normal size. The mucosa showed a normal pattern.

The thymus weighed 10 grams and presented a smooth surface. No gross abnormalities were seen.

ANATOMIC DIAGNOSIS

Endocardial fibroelastosis; cardiac hypertrophy, bilateral; chronic passive congestion of viscera; pericardial effusion; pleural effusion, bilateral; mesenteric adenopathy; intestinal dilatation.

PATHOLOGIC DISCUSSION

The presence of intense thickening of the left ventricular endocardium and elastosis supports the diagnosis made. Additional observations of cardiac enlargement and generalized visceral congestion and edema in the absence of valvular deformity and congenital or inflammatory impediments to cardiac function adds to the significance of the endocardial lesion.

Although a number of hypotheses to explain the appearance of endocardial fibroelastosis have been advanced, none will survive careful scrutiny. Its etiology is unknown. If the lesions results in healing of an inflammatory condition, residua of such a process cannot be demonstrated. Occlusion of accessory cardiac vessels could be considered equally as cause or effect.

Heart failure in fibroelastosis may be related to cardiac ischemia resulting from constriction of the arterioluminal vessels of the heart by the thick, contracting fibroelastic endocardial deposits.

REFERENCES

1. Gross, P.: Concept of fetal endocarditis. Arch. Path., **31:** 163, 1941.
2. Wearn, J. T.: Observations on the morphology and functions of some of the components of the coronary circuit. Bull. Johns Hopkins Hosp., **68:** 353, 1941.
3. Weinberg, T. and Himelfarb, A. J.: Endocardial fibroelastosis. Bull. Johns Hopkins Hosp., **72:** 299, 1943.

OBSTETRIC CASE REPORT*

This patient, a 27-year old, para 3–0–0–3, was admitted at term and in labor. Her past and family histories (noncontributory) and her previous pregnancies and labors had been normal. The present prenatal course was without incident and labor was considered to be established when she entered the hospital, although her pains were rather weak and far apart. Some 14 hours later there had been little or no progress and pains were still weak and ineffectual. A rectal examination at this time showed the cervical canal to be about 75 per cent effaced and the external os 2 cm. dilated. The presenting part, the vertex, was engaged, but had not descended. The presentation was an L.O.A.; the fetal heart was normal; fetal size not excessive and the mother's condition was considered normal. She was complaining of the "long" labor, and asked for assistance. At this time the patient was given 3 minims of posterior pituitary extract intramuscularly to increase the force and frequency of the contractions. This result was quickly obtained, the contractions becoming very much stronger and recurring at 2 minute intervals. One and a quarter hours after the pituitary extract had been given she delivered spontaneously a full term living child, which breathed and cried of its own accord. The third stage was of 5 minutes duration and the placenta appeared complete. Following delivery of the placenta, one ampoule of ergonovine was given intramuscularly. The uterus did not appear to contract and the patient was bleeding freely, so that an additional ampoule of ergonovine and one of pituitrin were given intramuscularly and the uterus vigorously massaged. This treatment was ineffectual. The uterus remained flabby and bleeding continued unabated. Her pulse rose and her blood pressure fell. Within one-half hour after completion of the third stage, she was in definite shock. A blood transfusion was begun and under the usual technique, the uterus was manually explored. No placental tissue was found and the uterus appeared intact. A very tight gauze pack was placed in the uterus and the vagina, and for a time the bleeding appeared to be controlled. It was noted at this time that in spite of 750 c.c. of whole blood, the shock state was not improved. One-half hour after the pack had been introduced, it had become saturated and external bleeding was again present. It was now decided to remove the uterus as an emergency procedure. Her condition suddenly became worse and death occurred before an operation could be performed.

Question: What criticisms could be made of the conduct of this case?

Discussion: From the history as given, there would appear to have been two major mistakes: First the patient was given pituitary extract in a dose of 3 minims intramuscularly when the cervical canal was incompletely effaced and the external os only 2 cm. dilated. The drug should not have been given at this time; indeed no treatment of any kind was indicated, but if it was considered that something had to be done, sedation, probably in the form of morphine would have been the method of choice. The patient evidently began her labor with an uneffaced cervix, and the uterus should not contract vigorously until effacement was complete. The second major error is the management of the post-partum bleeding. The most efficient route for the administration of an oxytocic drug is intravenously. Both ergonovine and pitocin can be given in this manner with safety and with the assurance that the maximum effect will be quickly obtained. Again the pitocin may be given by intravenous drip if desired, thus assuring a prolonged action, a very valuable procedure in the instance of a multigravida whose uterus shows a tendency to relax. This is not so important in this case as the failure to recognize the seriousness of the condition earlier and to institute proper treatment. The very questionable use of pituitary extract during labor and the vigorous response thereto, added to the failure of the treatment given to control the hemorrhage, point very definitely to damage to the uterine musculature. This is true even in the face of negative findings upon manual exploration. It is often difficult, and apparently at times impossible, to detect a partial rupture of the uterus by digital examination. Therefore, when this is true, it is necessary to rely upon the clinical aspects of the case as a guide. Here these appeared to be a hemorrhage which was not responding to ordinary measures. It would seem that much better results would have been attained if an immediate hysterectomy had been performed rather than uterine tamponade. While preparations for this were being made, the bleeding could have been largely controlled by pressure and counter pressure: One hand on the uterine fundus, the other hand either in the vagina compressing the cervix or with the fist holding a pad tightly against the perineum.

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* From the Department of Obstetrics, University of Maryland School of Medicine, Baltimore.

Note: A postmortem examination on this case revealed an incomplete rupture of the uterus.

MEDICAL SCHOOL SECTION

NOVEY ROOM DEDICATED

In the presence of officials of the School of Medicine and members of the immediate family of the late Dr. M. Alexander Novey, the obstetric teaching room on the 6th floor of the University Hospital was dedicated on Friday, July 21, 1950.

The complete renovation of an old, partially completed porch, as a teaching and conference room for graduate and undergraduate activities of the Department of Obstetrics was made possible through the generosity of the family, his many friends and the members of Dr. Novey's fraternity, Phi Lambda Kappa. The deep walnut paneling of this room, soft lighting and the simplicity yet elegance of the furnishings, lend an atmosphere of dignity, quite befitting the scholar and gentleman it memorializes. On one wall hangs an oil portrait of Dr. Novey, presented by members of his family, flanked by his membership certificates in the American Board of Gynecology and Obstetrics and the American College of Surgeons. On another wall there is an attractive lighted case with sliding glass doors which will house the departmental collection of historic obstetric instruments.

The name of a well-loved, respected scholar and a valued member of the Department of Obstetrics of the School of Medicine will be perpetuated and his memory and achievements will serve as a continuing inspiration and stimulus to those who follow his path in the teaching of medical students and in the practice of obstetrics, his chosen field.

View of Novey Room, University Hospital

CONSTRUCTION OF PSYCHIATRIC UNIT TO BEGIN

With the razing of the State Roads Testing Laboratory on Lombard Street (shown in illustration) and with the completion of final, specific awarding of contracts, construction of the new Psychiatric Unit of the School of Medicine will begin shortly.

In the marked illustration below, the outline of the new building is superimposed upon existing territory recently acquired by the University, the building shown in the illustration having now been completely demolished.

The new Psychiatric Building shown in the architect's drawing is accurately described from information obtained from Dr. Jacob E. Finesinger under whose direction the construction will proceed.

The addition of this valuable facility will greatly enhance the psychiatric care of the patients and will add measurably to the quality of psychiatric professional instruction to both undergraduates and graduates.

This unit was planned to serve the psychiatric needs of a University Department of Psychiatry in a large city. The first consideration was that of service to the University Hospital and to the community at large. The upper three floors of the building have facilities for the treatment and care of 102 patients. It is hoped that this number of beds will adequately care for the psychiatric needs of the University Hospital and for the acutely disturbed patients that come to the attention of psychiatrists and other physicians. The Out-Patient Department, which will occupy the three lower floors, will allow for the expansion of the present psychiatric and child guidance clinics and for the development of new clinics. Ample facilities are available for the undergraduate and graduate teaching needs of the University and for research.

Each of the upper floors is arranged in two wards with dining rooms next to a central kitchen for each ward. The nurses' station is in the center of each floor allowing ready visibility and access to the rooms along the corridors. The third and fourth floors will be used for disturbed white and negro patients. One-half of the fifth floor is designed for patients with milder disturbances such as psychoneuroses and psychosomatic disorders; the other half for a children's in-patient psychiatric unit. In designing and furnishing all rooms, attention has been paid to the patients' safety and comfort. Attempts have been made to achieve a simplicity of design and function in pleasant home-like surroundings. For the treatment and care of adult patients there are 10 wards for 4 patients each. The remaining space is to be used for single rooms. The childrens' unit is arranged in 4 large wards each accommodating 4 patients.

Facilities have been planned to treat patients in every phase of psychiatric illness and rehabilitation. Six rooms are available for the care of patients in the acutely disturbed phase of their illness. There are two small units for various types of shock treatments and one unit for hydrotherapy situated on and adjacent to the disturbed wards. For patients not so acutely disturbed, occupational therapy is planned in each of the six large day rooms, two of which are on each floor. In addition, there is a large central unit for occupational therapy in the terrace or ground floor of the building for more active occupational and vocational rehabilitation, to be used for both in-patients and those treated in the out-patient department. The day rooms serve several functions. They can be used for group therapy, occupational therapy and for recreation. In addition, recreational facilities are available for both adults and children in a large auditorium and gymnasium on the sixth floor which leads on to an enclosed roof. On the north side of the building there is a large playground available to in-patients as well as to out-patients. An additional out-door play area for children is planned leading directly into a large in-door play area on the terrace floor. This is to be used both for children in the child guidance clinic and in the in-patient department. Facilities are available in the in-door play area for supervised play and for group therapy.

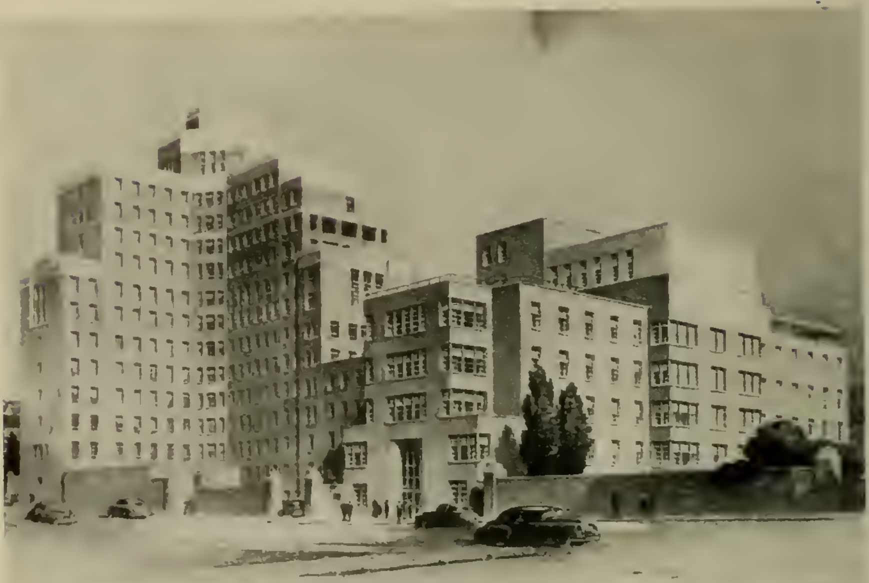
The lower three floors of the building are to be used for the child guidance clinic and for out-patients. In all there are 63 offices available for the use of physicians, nurses, psychologists and social workers. There are five large waiting rooms and three conference rooms. Two of these offices are designed for individual play therapy in the child guidance department. Much of modern psychiatric treatment is inter-personal treatment in which patients are treated individually through interviews or in groups, therefore it becomes essentially office practice whether the patients are in-patients or out-patients. Eleven offices are available adjacent to the wards. On the second floor, 14 offices can be used for both in-patients and clinic patients.

A major function of the department will be that of teaching medical students, graduate physicians, nurses, attendants, social workers, psychologists, recreational workers and technicians of various trends. For this, two conference rooms are available on the terrace floor, three conference rooms are on the first floor, one large conference room on the second floor and in addition, one conference room in each of the wards. A large lecture hall with 100 seats, equipped with a projection room for sound films is on the second floor. A large study library is on the same floor with indented cubicles for undergraduate and more advanced students. The large recreational area on the sixth floor can be used for lectures and movies for various groups of patients, their relatives and students.

In psychiatric teaching great emphasis is laid on the demonstration of various therapeutic techniques, interviewing and the development of special skills and techniques of behavior. For this purpose a unit has been developed that consists of an observation room located between two treatment rooms. Each of these rooms has a one way mirror permitting students to observe interviews and treatment. Each treatment room has a microphone through which the interviews can be broadcast directly into the observation room, and recordings can be made of interviews, group treatment and conferences. One of these units is on the terrace floor for the observation and recording of play therapy; there is one on the first floor and two on the second floor. Each of sixteen offices has microphone outlets currented to a central receiving station on the first floor so that any physician or student can make recordings for purpose of study. There is a library for recordings on the second floor near the larger library where students can listen to recorded interviews. These facilities make available ample material for teaching and research.

Space has been provided for clinical and research laboratories. The electroencephalographic laboratory is on the second floor of the connecting wing. It consists of three rooms facing a central recording room. Connections are available to several other laboratories. Three clinical laboratories, a psychologic laboratory and a neurophysiologic laboratory are located in the connecting wing between the psychiatric unit and the general hospital. These are available to the general hospital for purposes of diagnosis, treatment and research.

A major area for research is that of personal, interaction and group dynamics. A



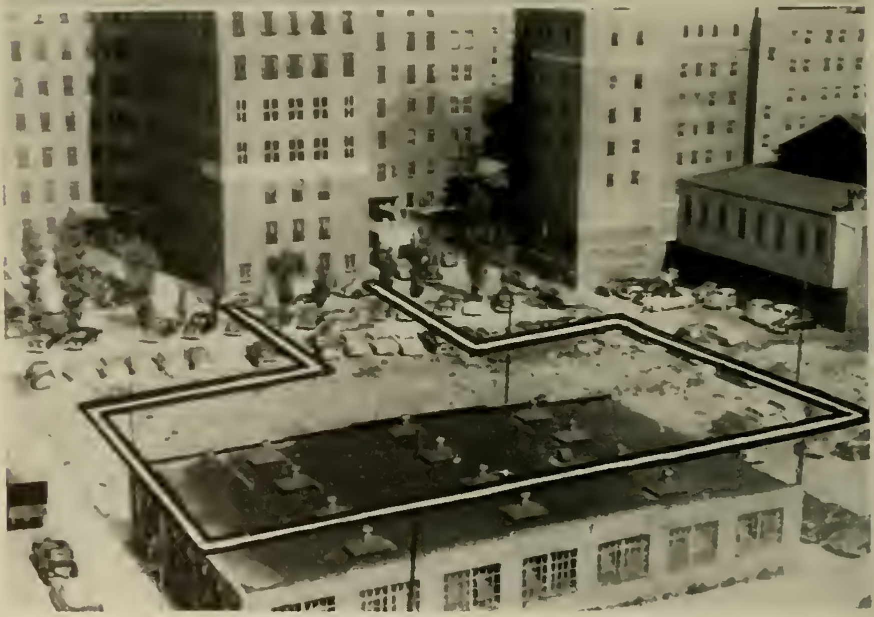


FIG. 1. Architect's drawing of new Psychiatric Unit and wing of University Hospital. The front entrance will be on Redwood Street, West of the present Hospital.

FIG. 2. View of Redwood Street, West of University Hospital. Site of Psychiatric Unit is drawn in with dark lines. Building in foreground has now been razed.

laboratory on the first floor is especially designed for this type of clinical observation and research. This laboratory is wired directly to all the recording rooms, and to the electroencephalographic laboratory so that various functions can be studied simultaneously.

In planning these various facilities great care has been taken to have the patients' rooms, the conference rooms, offices and laboratories so arranged that they can be used for many purposes. Ample facilities are available for modern psychiatric treatment, various types of teaching and research. The plans represent the painstaking efforts of experienced architects, the medical school and hospital administration and innumerable consultants. It is hoped that the facilities provided shall be of utmost use to the various departments of the medical school, the University and the community at large.

LIBRARY NOTES

Among the many continued gifts made to the library during the past quarter, and gratefully received, was some of the early yearbooks and catalogues of the School of Medicine and College of Physicians and Surgeons. The library files are still incomplete. Any additional volumes will be appreciated.

During the period from May 1 through July 31, 1950, the following donors presented books and journals to the library:

Dr. W. A. Andersen
Dr. C. J. Carr
Dr. F. C. Eleder
Mr. R. A. Douglas
Dr. J. E. Finesinger
Dr. R. B. Garland
Mrs. J. G. R. Graham
Dr. L. Guggenheimer
Dr. F. W. Hachtel
Hynson, Westcott, & Dunning
Dr. Maxwell Ibsen
Mayo Clinic
Dr. R. T. Parker
Dr. M. C. Pincoffs
Dr. M. S. Sacks
Dr. J. E. Savage
Dr. W. F. Skillman
Mr. Edward Smith
Dr. E. B. Truitt
Dr. H. L. Wheeler

A generous gift of money was presented to the library by Mrs. H. B. Sheffield of Little Silver, New Jersey, in memory of her husband Dr. Herman B. Sheffield, P. & S., class of 1895. Books purchased with this money will be appropriately marked with a memorial bookplate.

Librarians: attention. Volume 34 of the Bulletin of the School of Medicine, University of Maryland, ended with no. 3 instead of the usual no. 5 (because of a change in status of the publication). It was originally planned to publish an index for the three numbers of volume 34, but that plan has not proved feasible. Do not hold your volume 34 for any further issues.

P.H.S. CANCER LECTURES TO RESUME

Under the auspices of the Cancer Teaching Program of the United States Public Health Service a series of 8 lectures will be given throughout the year at monthly intervals beginning in September and continuing throughout the academic year.

These lectures will be presented by outstanding clinicians and researchers in the field of basic cancer research and in clinical management of malignant diseases.

All lectures will be held in Gordon Wilson Hall, University Hospital the 3rd Wednesday of each month beginning promptly at 4 P.M.

For details of topic and lecturer contact Dr. Edwin H. Stewart, Jr., University Hospital.

MEMORANDUM CONCERNING REPRINTS

The Dean's office recently issued the following memorandum for members of the Faculty concerning reprints of scientific articles.

The Publications Committee of the Faculty Board has recommended that the present procedure of collecting and binding reprints of research publications of the School of Medicine be discontinued.

To replace this volume a bibliography of published research papers of the Faculty of the School will be compiled and published. This will appear as an attractive and well-printed brochure each year.

The purchase of reprints by the Dean's office has now been discontinued. *A notice of each publication should be sent, however, to the Chairman of the Publications Committee, whose address appears below, giving the full title of the article, the journal reference* and *the names of the authors.*

By action of the Faculty Board June 2, 1950, it was voted, "That *five reprints of each article published from the Medical School be sent by the author to the Dean's office.*"

Your cooperation in this matter is solicited. A creditable showing of research publications can be made only if each member of the Faculty supplies the Committee with a bibliography of his own journal articles.

C. Jelleff Carr, Chairman Publications Committee
School of Medicine, University of Maryland,
29 S. Greene Street
Baltimore 1, Maryland

STUDY COURSES FOR GENERAL PRACTITIONERS

A memorandum from the Dean's Office calls attention to two very important publications of interest to those in general practice or to those who contemplate entering this field of medicine.

The Committee on Education of the American Academy of General Practice has prepared two very important pamphlets, *Report on Internship and Resident Training for General Practice*, (GP, **1**: 3, (May), 1950) and *Medical Study Courses for the General Practitioner* published in GP, **1**: 3, (April), 1950. The latter lists in more or less detail all of the available post graduate courses and their description as offered by the Medical Centers throughout the United States. The former is an outline of the established residencies for continuation training relating to the general practice of medicine. Both reprints are well edited and may be obtained from the Commission on Education, American Academy of General Practice, Broadway at 34th Street, Kansas City 2, Missouri.

APPOINTMENTS TO THE FACULTY

Mr. John I. White, formerly of Rutgers University has been appointed United States Public Health Service Fellow in Physiology.

Dr. J. Tyler Baker of Easton, Maryland has been appointed Associate in Post Graduate Obstetrics. Dr. Baker will supervise the Post Graduate Training Program in Obstetrics at the Memorial Hospital, Easton, Maryland.

Mr. Joseph R. Merkel has been appointed Research Assistant in Bacteriology.

Dr. Edward G. Field has been appointed Assistant in Pediatrics.

RESIGNATION

Dr. Harry K. Iwamoto, Assistant Professor of Pharmacology, School of Medicine, has resigned effective August 31, 1950.

DEPARTMENT OF BACTERIOLOGY

Two papers were presented by the Department of Bacteriology at the 7th International Congress of the International Society for Cell Biology in September, 1950.

One paper considered *The Nuclear Structure of B. megatherium* by Dr. Andrew G. Smith, Dr. E. D. DeLamater and Dr. Stuart Mudd.

The other paper was entitled *The Fixing Effect of the Electron Beam on Bacterial Specimens.* This was presented by Drs. S. Mudd, A. G. Smith and E. Buetner. Recent publication by the department include the following.

The Mechanism of Resistance to Sulphonamides. IV. A Comparative Study of the Amino Acid Metabolism of Staphylococcus aureus in Relation to the Mechanism of Resistance. By E. Steers and M. G. Sevag. Published in the Archives of Biochemistry, **24,** No. 1 (Nov.) 1949, pages 129–143.

The Mechanism of Resistance to Sulphonamides. V. A Quantitative Study of the Alternate Metabolic Pathways Involving Tryptophan and Glucose Metabolism and Aerobic and Anaerobic Growth Conditions in Relation to the Mechanism of Resistance. By M. G. Sevag and E. Steers. Published in the Archives of Biochemistry, **24,** No. 1 (Nov.) 1949, pages 144–156.

The Mechanism of Resistance to Sulphonamides. VI. A Comparative Study of the Resistance to Sulphathiazole of the Metabolism of Glucose and Pyruvate by Staphylococcus aureus. By M. G. Sevag, E. Steers and M. Forbes. Published in the Archives of Biochemistry, **25,** No. 1, (Jan.) 1950, pages 185–190.

Presented at the meeting of the Society of American Bacteriologists held in Baltimore, Maryland, May 14–18, 1950 were papers entitled:

On the Inability of Folic Acid per se to Serve as a Growth Factor for Lactobacillus arabinosus 17-5 in place of p-Aminobenzylglutamic Acid or Aminobenzylglutamic Acid. By B W. Koft, E. Steers and M. G. Sevag.

Electron and Light Microscopic Studies of Bacterial Nuclei. I. Adaptation of Cytological Processing to Electron Microscopy; Bacterial Nuclei as Vesicular Structures. By Stuart Mudd and Andrew G. Smith. Published in the Journal of Bacteriology, **59,** No. 4 (April), 1950, page 561.

Electron and Light Microscopic Studies of Bacterial Nuclei, II. An Improved Staining Technique for the Nuclear Chromatin of Bacterial Cells. By Andrew G. Smith. Published in the Journal of Bacteriology, **59,** No. 1 (April) 1950, page 575

DEPARTMENT OF BIOLOGICAL CHEMISTRY

DR. HERBST APPOINTED ASSISTANT PROFESSOR

A vacancy on the staff of the Department of Biologic Chemistry has been filled by the appointment of Dr. Edward J. Herbst as Assistant Professor, effective July 1, 1949. Dr. Herbst was born in Jacksonport, Wisconsin in 1918 and received a B.S. degree in biochemistry from the University of Wisconsin in 1943, the M.S. degree in 1944. During the war he served as research biochemist at Camp Detrick, Frederick, Maryland, and also was a member of the Medical Research Unit at the University of California, Berkeley.

Upon release from the armed services Dr. Herbst returned to his graduate studies in biochemistry and microbiology under Dr. E. E. Snell at the University of Wisconsin where he was granted the Ph.D. degree in 1949. He is the author of several research papers in the field of bacterial nutrition and recently announced the discovery that putrescine, the well known putrefactive amine, is an essential growth factor for certain microorganisms. The scope and importance of this interesting observation remains as yet unevaluated. At the School of Medicine Dr. Herbst will continue his studies on the metabolic activities and functions of putrescine in microbial, animal, and human metabolism.

DR. EDWARD J. HERBST

DR. RAYMOND VANDERLINDE JOINS FACULTY

Dr. Raymond E. Vanderlinde of Syracuse, N. Y. was recently appointed Assistant Professor of Biologic Chemistry, effective September 1, 1950. Dr. Vanderlinde has been granted the following degrees, all from the Syracuse University: B.S. in general science in 1944, M.S. in organic chemistry in 1947, and the Ph.D. in medical biochemistry in 1950 under Dr. W. W. Westerfeld. Dr. Vanderlinde has been actively engaged in research work for several years on the chemistry and physiology of the female sex hormones and on the mechanism of action of "antabuse." He will continue his investigations in these fields.

Research Assistants Appointed

Two research assistants have also been appointed in the Department of Biologic Chemistry: Miss Elizabeth Boyle, B.S. 1949 from the University of Delaware, and Miss Jean D. Nimmo. A.B., 1950 from Goucher College. Mrs. Dorothy Hubbard has again been appointed John F. B. Weaver Fellow in Biologic Chemistry.

DR. RAYMOND E. VANDERLINDE

DEPARTMENT OF PEDIATRICS

Dr. J. E. Bradley, Professor of Pediatrics will present a paper entitled "Regurgitation in Infancy" at the National meeting of the American Academy of Pediatrics in Chicago in October 17, 1950.

Dr. Blackburn S. Joslin, formerly resident in Pediatrics at the University Hospital has arrived in Heidelberg, Germany. Dr. Jerome Imburg, formerly Assistant Resident in Pediatrics has accepted active duty with the U. S. Navy and has been assigned to transport service.

Dr. Miles E. Drake formerly of the Department, at present associated with the Childrens' Hospital in Philadelphia recently attended the Liver Conference in London, and the International Pediatrics Conference in Switzerland.

Recent contributions to the literature from the Department include two papers, "Secretin Test with Gastroduodenal Drainage in Pediatrics" and "The Presence of Secretin in Fibrocystic Disease," both by Dr. Gordon E. Gibbs.

SURPLUS EQUIPMENT

The Office of Financial Administration has available an inventory of equipment which may be obtained through interdepartmental transfer upon proper application.

Departments which possess equipment no longer useful or desirable, through this medium can list this inventory and by exchange with other departments might possibly acquire equipment at a great saving.

Academic Calendar, 1950—1951

1950

November	21	Tuesday	Instruction suspended at 5:00 P.M. Thanksgiving Holiday
November	27	Monday	Instruction resumed
December	21	Thursday	Instruction suspended at 5:00 P.M. Christmas Holiday

1951

January	3	Wednesday	Instruction resumed
January	22	Monday	Midyear examinations
	to		
January	27	Saturday	First semester completed, 2:00 P.M.

POST GRADUATE COMMITTEE SECTION

POST GRADUATE COMMITTEE, SCHOOL OF MEDICINE

Howard M. Bubert, M.D., *Chairman and Director*

Sarah Cook, M.D.,
Assistant Director

Elizabeth Carroll,
Executive Secretary

Post Graduate Office: Room 600
29 South Greene Street
Baltimore 1, Maryland

In cooperation with the Chief Medical Examiner of the State of Maryland, Doctor Russell S. Fisher, this Committee is sponsoring a series of medico-legal seminars for police officers, such as those that have proven their value at the Medical School of Harvard University. It is of interest that Doctor Fisher came to Maryland from this school at Harvard. Few people realize the high level of training reached by enforcement officers of the better Police Departments of this Country and the imperative need for such training presented by the smaller organizations operating in this field.

Officers capable of making adequate homicide investigations are agents of justice indispensable to the proper curbing of the shocking number of crimes of this nature occurring in this Country yearly. No less important is the fact that well trained men will be less likely to be instruments of injustice in condemning the innocent.

The Post Graduate Committee believes this work to be well worthwhile and feels certain that the course will represent something of value to every citizen of the State of Maryland.

ANNOUNCEMENT

The teaching of medico-legal science to other than medical students in any formal classroom type of presentation was not attempted until six years ago. Prior to that time, there had been a short series of lectures for medical students given at Harvard Medical School and in other Medical Schools throughout the Country since the early 1900's, covering, in a general way, Medical Jurisprudence and the Pathology of Trauma.

In 1937, there was established at Harvard, the Frances Glessner Lee Chair of Legal Medicine and the first Professor to hold the Chair was Doctor Alan R. Moritz. After extensive travel and study of legal medicine in English and Continental centers, he actually began full-time work at Harvard Medical School in 1939–40. Soon thereafter, there were begun the first experiments in the conduct of "Seminars in Homicide Investigation". The first session was held for Medical Examiners and met with an unexpected degree of success and demand arose immediately for a repeat seminar.

Meanwhile, Mrs. Lee, who had had an active interest in legal medicine for years through her friendship with Dr. Wm. Burgess McGrath, (predecessor to Dr. Moritz, as Professor of Legal Medicine, but before the full-time Chair was established) had become keenly interested in teaching medico-legal techniques to state police officers and others who, as laymen, (not medical examiners or coroners), were concerned with homicide investigation. She had shared with Dr. Moritz the organization of the seminars for medical examiners and so turned to this medium in her effort to teach police officers. As a result of this, there have been held at Harvard up until now, eight one-week seminars in Homicide Investigation, with the registration limited to officers of State Police Forces in the United States and Canada. Several other seminars for Pathologists, Medical Examiners and other professional groups have been held and one such course was given for city police officials.

A new and interesting feature introduced by Mrs. Lee was the preparation, with meticulous accuracy, of models of crime scenes for use in teaching students to observe and deduce reasonably. She has built about twenty of these for use at Harvard and now is engaged in the task of making four for the Department of Legal Medicine of the School of Medicine, University of Maryland, which will be used as teaching aids in the course under discussion. It is our hope that she will further favor us with more of these valuable and fascinating models.

What we propose to do at this University is to make available to municipal and county police officers of Maryland, (and we hope eventually a wider territory), courses of training which are in general, similar to those currently being offered at Harvard.

PROGRAM

SEMINAR IN HOMICIDE INVESTIGATION

October 23—28, 1950

Sponsored by Division of Legal Medicine, Post Graduate Committee of the University of Maryland, School of Medicine, and the Office of the Chief Medical Examiner, State of Maryland

Monday, October 23, 1950

9:30 Registration and Introduction, Dr. Fisher
10:00 When and Why Should a Death be a Subject of Official Medico-legal Inquiry, Dr. Fisher
11:00 Homicide Investigation, Dr. Ford

Identification

1:00 Intact Bodies, Dr. Lovitt
1:30 Skeletal Remains, Dr. Durlacher
2:15 Case Studies, Dr. Lovitt and Dr. Durlacher
3:00 Public Disasters, Dr. Ford

Tuesday, October 24, 1950

Causes of Death

9:00 Death by Poisons, Dr. Walker
10:00 Deaths by Gunfire—Medical Evidence, Dr. Fisher
11:00 Deaths by Gunfire—Laboratory Evidence, Dr. Walker

12:00 Luncheon

1:00 Assignment of Miniature Crime Studies (one-half class), Dr. Fisher
Inspection and Demonstration of Laboratory Tests (one-half class), Dr. Freimuth

Wednesday, October 25, 1950

Causes of Death, Continued

9:00 Blunt Injury, Including Death from Natural Cause after Trauma, Dr. Durlacher

10:00 Preservation of Evidence, Dr. Freimuth

11:00 Evidence Pertaining to Alcohol, Dr. Krantz

12:00 Luncheon

1:00 Abortion and Infanticide, Dr. Fisher

2:00 Suffocation, Strangulation and Conflagration Deaths, Dr. Lovitt

3:00 Time of Death, Dr. Durlacher

Thursday, October 26, 1950

9:00 Death from Obscure Causes, Dr. Lovitt

10:00 Pseudo Murders, Dr. Fisher

11:00 Pseudo Murders, Dr. Fisher

12:00 Luncheon

1:00 Concealed Murders, Dr. Helpern

2:00 Inspection and Demonstration of Laboratory Tests (one-half of class), Dr. Freimuth
Assignment of Miniature Crime Studies (one-half of class), Dr. Fisher

Friday, October 27, 1950

9:00 Traffic Deaths, Mr. Stratton

10:00 Reports of Homicide Investigations, Capt. Davidson

11:00 Rape, Dr. Mann

12:00 Luncheon

1:00 Miniature Crime Studies, Reports and Discussions, Dr. Fisher

Saturday Morning, October 28, 1950. Mock Trial

9:00 The Commonwealth Vs. Jones. Charge—Homicide

11:00 Critique

12:00 Adjournment

STAFF

G. E. Davidson, Captain Maryland State Police Bureau of Investigation and Identification

S. H. Durlacher, M.D., Assistant Medical Examiner, Maryland

R. S. Fisher, M.D., Chief Medical Examiner, Maryland

Richard Ford, M.D., Department of Legal Medicine, Harvard Medical School

Frank Stratton, Police Chemist, Boston City Police Department

H. C. Freimuth, Ph.D., Toxicologist, Department of Post Mortem Examiners, Maryland
Milton Helpern, M.D., Deputy Chief Medical Examiner, New York City
William V. Lovitt, Jr., M.D., Assistant Medical Examiner, Maryland
John C. Krantz, Jr., Ph.D., D. Sc., Professor of Pharmacology, University of Maryland Medical School
Geoffrey T. Mann, M.D., LL.B., Chief Medical Examiner, Commonwealth of Virginia
J. T. Walker, Ph.D., Department of Public Safety, Massachusetts
Anselm Sodaro, Esq., Asst. State's Attorney, Baltimore City

Limited Registration.................................. Tuition, $30.00

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Lewis P. Gundry, M.D.

The names listed above are officers for the term beginning July 1, 1950 and ending June 30, 1951.

PRESIDENT'S LETTER

It is with mixed emotions that I accept this honor in our Alumni at this particular time. It must be apparent to all that every one of us is, and will be affected by the great social and cultural revolution going on about us. The "old order" is gone. Lip service to Judeo-Christian ideals and virtues will not be enough for survival. These ideals must now be put into practice so that our interpersonal relationships might be continually improved.

I believe, in addition, that our living standards will certainly be lower than those to which we are accustomed. In many respects this will be a blessing in disguise. The word 'lower' here is a bit misleading, since it is generally implied that our levels are higher than the rest of the world according to the strictly provincial American interpretation. Much that we value in our American way is not necessarily good for our culture, well being or survival. Equalizing our standards with the rest of the world, by raising those outside of our country and adjusting ours, will mean eventual gain for every one. The transition will bring less luxury, more work and love, denial and some suffering. Only from such disciplines will spiritual progress come. I think you will all agree that this is what is most needed today. Such emphasis must be placed, not only in our homes but also in our schools. There is an increasing need for the teaching and practicing of better interpersonal relationships in all our educational efforts.

We will all be sorely tried by the increasing encroachment of the state on individual enterprise. This tendency always becomes greater during an emergency such as war. To be sure, each one of us will again be willing to serve and sacrifice during this present war emergency. If we are completely motivated by our American ideals and remain captive to them, we will triumph over the many crises that are certain to arise in the very near future. The virtues and truth that guided the founders of our country are still valid. These same beacon lights must guide our school and its Alumni. In the words of the poet, "I pray not for easier tasks, but for power equal to the tasks," particularly these critical years immediately ahead of us.

Louis A. M. Krause, M.D.,
President

Bulletin Subscriptions Now Due

Because of Federal Postal regulations applicable under the reorganization plan of the Bulletin, it will be impossible in the future to send the journal free. With the cessation of the open mailing list, it is imperative that all former subscribers including alumni, interested non-alumni and other institutions such as libraries, forward the annual subscription to the Bulletin without delay. Prompt receipt of subscription will enable the Bulletin to maintain the continuity of the 1949-50-51 series. Volume 36 will begin with the January, 1951 issue.

NEW ENGLAND ALUMNI STATISTICS

Figures compiled by Dr. Charles E. Gill, Secretary and Treasurer of the New England Alumni Group showed in 1950 that, 309 active and retired Alumni of the University of Maryland were living in the six-state area.

Graduates of the University of Maryland School of Medicine between 1935 and 1946 scored a net gain of 27 during the 12 year period. Fifty recent graduates have settled in the six states comprising the New England area with 24 in Connecticut, 18 in Massachusetts, 7 in Rhode Island, 3 each in New Hampshire and Vermont and 1 in Maine.

Baltimore Medical College graduates now number 100 as compared to 220 in the 1938 listing. Graduates of the College of Physicians and Surgeons dropped from 147 in 1938 to 72 in 1950.

Massachusetts still leads in the number of graduates with 108 listed in 1950. Connecticut ranks second with 98 and Rhode Island third with 37. Fourteen were listed in Vermont, 19 in New Hampshire and 23 in Maine. A few of the older Alumni have retired and moved from the New England States. Another small contingent has moved to other states or entered government service.

Dr. Gill reports the oldest living Alumni from the three schools, currently practicing. are Dr. George L. Kinne (U. of M. 1887) of Bennington, Vt.; Dr. Arthur C. Lewis (P. & S. 1893) of Fall River, Mass.; and Dr. F. R. Goff (B.M.C. 1890) of Exeter, N. H.

Dr. Thomas P. Murdock, B.M.C., class of 1910, of Meriden, Connecticut was recently elected a member of the Board of Trustees of the American Medical Association at the June, 1950 meeting in San Francisco.

He will serve a five year term and will replace Dr. James R. Miller of Hartford. Dr. Murdock served a term as President of the Connecticut State Medical Society from 1935 to 1936.

LLOYD NOLAND HOSPITAL DEDICATED*

With the unveiling of a bronze placque on April 22, 1950, the Employees Hospital of the Tennessee Coal, Iron and Railroad Company, Birmingham, Alabama became the Lloyd Noland Memorial Hospital in memory of Dr. Lloyd Noland, B.M.C., class of 1903. The hospital, founded in 1920, and directed by Dr. Noland, thereby becomes a monument to his continued interest and service to the community and to the employees of the Company he served.

Dr. Noland first became associated with the Tennessee Coal, Iron and Railroad Company in 1913 as a medical officer charged with eradicating epidemic diseases among the employees. Under his direction the health service was organized which in a few years reduced the instance of disease to almost negative proportions. Under his supervision the 350 bed hospital which now bears his name was completed in 1919. A completely equipped hospital, it has the facilities for more than 30,000 employees and their families.

Dedication ceremonies of the Lloyd Noland Hospital

The Lloyd Noland Hospital thus becomes a continuous memory and tribute to a physician respected in his community and who by virtue of the qualities of dynamic leadership, wholesome understanding and cooperation was responsible for an important contribution to the health of his community.

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* Dr. Lloyd Noland's obituary appeared in the Bulletin, 35: xxiii (July, 1950).

AVAILABILITY OF BLUE CROSS INSURANCE TO RURAL AREAS

Blue Cross Insurance is available to farmers and related groups through membership in their respective Farm Bureau or Grange. It is also available through rural auxiliary fire departments.

Farmers, whose particular Grange has not been covered, should be encouraged if they desire to have this type of insurance to obtain it through one of the alternative groups mentioned.

ALUMNI DAY, 1950

With more than 250 Alumni in attendance the annual Alumni Day began on Friday, June 9th with registration at 9 A.M. Clinics were held in the hospital and the following papers were read. *Diagnosis and Treatment of Epilepsy* by Dr. Ruth Baldwin and *The Status of Uterine Pack in Postpartum Hemorrhage* by Dr. Louis H. Douglass. These were followed by a Clinical Pathologic Conference by Drs. Maurice C. Pincoffs and Hugh R. Spencer. Exhibits by various departments of the School of Medicine were open from 9 A.M. to 5 P.M. on the 6th floor of the Bressler Research Laboratory. They included the following:

- Preservation and use of arterial grafts
- Oxycephaly
- New method of cardiopneumopexy
- Lucite plumbage therapy
- Hypospadius
- Electroencephalography
- Diagnosis of bronchogenic carcinoma by bronchoscopic aspiration
- Studies in cerebro-vascular reflexes
- Total intravenous alimentation in intestinal fistulae
- A new head-rest for animal surgery
- Studies on megacolon
- A new automatic releasing drill for cranial surgery
- Intracranial calcification in hypoparathyroidism
- Cerebral angiography
- Full-thickness skin graft in repair of ventral hernia
- Unusual oesaphageal lesions
- Leukemic blood in treatment of generalized carcinomatosis
- Retropubic prostatectomy
- Fibrous displasia of bone
- Use of newer antibodies in peritonitis of appendicial origin, experimental and clinical
- Skin Clinic with demonstrations
- Library of the School of Medicine
  - Display of early books on psychiatry
  - Exhibit of yearbooks of reunion classes

The scientific sessions were followed by the customary luncheon held in Chemical Hall.

The annual meeting of the Alumni Association was called to order by President Triplett who then introduced Dr. Arnold D. Tuttle, class of 1906 and Medical Director for the United Air Lines who delivered the annual Alumni address.* Following Dr. Tuttle's remarks, Dr. Triplett conferred upon him the Alumni gold key and Honor Award. Routine business concerned the election of officers for the coming year which included Dr. Louis A. M. Krause as president, the vice-presidents being Drs. Samuel E. Enfield, Cumberland, Maryland, Randolph M. Nock, Salisbury, Maryland and Fred B. Smith, Baltimore. Drs. Albert E. Goldstein and Daniel J. Pessagno were elected to the Board of Directors and Dr. David Tenner to the Nominating Committee. The secretary reported that the total number of active members was 1,277.

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*Dr. Tuttle's address entitled "The Air Line Pilot—His Physical Maintenance" is published elsewhere in the Bulletin.

Presentation of several valuable volumes including several important yearbooks of the University was made on behalf of Dr. Wilbur Skillman, the donor, by Dr. John A. Wagner to Dr. John E. Savage, Chairman of the Faculty Library Committee.

Following the annual meeting, informal receptions and cocktail parties were held for the respective reunion classes including a reception in honor of Dr. Arnold D. Tuttle by members of the Nu Sigma Nu medical fraternity.

The annual banquet, attended by 417, was held in the ballroom of the Southern Hotel and was conducted in the customary fashion.

The following physicians registered during the Alumni Day activities:

1886

R. Sumter Griffith

1888

Henry B. McDonnell

1895

Edward Baum
Bertrand A. Chapman
Franklin G. Haines
Thomas W. Keown
Frederick C. Steuart
Nicholas G. Wilson

1896

Harvey G. Beck

1897

Robert W. Love
Lucius Glenn

1898

Page Edmunds
Burton W. Fassett

1900

James S. Akehurst
E. H. Doble
Julian F. Chisholm
J. Clagett Robertson
Frank W. Smith
William H. Smith
Walton L. Strother
G. Allen Troxell

1902

Arthur M. Shipley

1903

Charles B. Ensor

1904

Charles Bagley, Jr.

1905

H. L. Crist
W. J. Heffner
C. D. Rollins
W. E. Van Landingham

1906

Bernard O. Thomas
Arnold D. Tuttle

1909

Harry M. Robinson, Sr.

1910

Thomas Brooks
J. J. Burne
William S. Conwoy
D. J. Cronin
R. C. Dodson
Cyril E. Fowble
L. O. Fox
W. R. Gardiner
Joseph C. George
William A. Gracie
W. G. Harper
A. L. Hyatt
L. Winfield Kohn
J. Walter Layman
V. H. McKnight
Harry B. Messmore
B. L. Naiman
Walter Neller
John G. Runkel
Herman Seidel
Maurice E. Shamer
George Speicher
Hugh R. Spencer
Ralph Truitt
Walter M. Winters

1911

Luis H. Douglass
John F. Hogan
William H. Triplett

1912

Albert E. Goldstein
H. Boyd Wylie

1913

Charles Reid Edwards

1914

John F. Lutz
Austin H. Wood

1915

Charles A. Cahn
Albert A. Naumann
Ernest M. Rieger
Paul B. Steele

1917

Louis A. M. Krause

1918

Joseph Sindler

1919

Wetherbee Fort

1920

Lynn H. Brumback
Howard Bubert
A. M. Janer
N. T. Lombardi

C. C. Burton
Nestor de Cardonas
Louis C. Dobihal
Harold Evans
Ben Gold
Frederick A. Holden
Z. Vance Hooper
Albert Jackvony
William F. Martin
W. K. McGill
George C. Medairy
Joseph Ponte, Jr.
J. Morris Reese
R. W. Richardson
J. W. Skaggs
Howard L. Tolson

1923

Karl Myers
W. Wallace Walker

1924

James T. Marsh

1925

S. P. Balcerzak
Leo T. Brown
M. Paul Byerly
Abraham Clahr
Arthur A. Cope
Eva F. Dodge
Jacob Dreskin
J. Sheldon Eastland
Lee W. Elgin
Francis A. Ellis
Harold Fischman
L. H. Gale
Samuel S. Glick
John P. Keating
George Leibensperger
Charles A. Minnefor
Joseph Nataro
James W. Nelson
Henry Oshrin
Joseph Polizzotti
L. E. Pulaski
Jack Sarnoff
J. M. Silverstein
R. S. Widmeyer
Paul Wilson

1926

Margaret Ballard

1927

T. Nelson Carey
A. H. Finkelstein
Frank K. Morris
Herbert Reifschneider

1928

Hugh Bailey
Simon Brager
Joseph Laukaitis

1929

Ernest Levi
Henry Ullrich
George Yeager

1930

William Belinkin
Archie R. Cohen
J. George Feman
James L. Garey
Samuel H. Kraemer
Thomas F. Magovern

1931

Sol Smith
Mark Hollander

1932

John C. Dumler
Harry C. Hull
Samuel Proctor
John E. Savage

1933

Earl Hemminger
John L. Van Metre

1934

Thurston R. Adams
Louis V. Blum
Manuel Levin
Milton Sacks

1935

J. B. Anderson
D. T. Battaglia
Ernest I. Cornbrooks
Edward F. Cotter
Ferdinand Fader
Saul Lieb
Howard Mays
Karl Mech
Philip Owen
Joseph Ponte, Jr.
Philip Galitz
Walter H. Gerwig, Jr.
John Godbey
John C. Hamrick
Josiah Hunt
Irving Klompus
Caleb R. Layton
Harry M. Robinson, Jr.
Harold Rosenberg
George Schmitt
Milton Siscovick
Louis Teitel
Joseph Tuby
J. B. Wheless
Lewis K. Woodward

1936

George Davis
Walter E. Karfgin
W. Kennedy Waller

1937

Eugene Bereston
Everett S. Diggs
D. Frank Kaltreider
E. T. Lisansky
J. Earl Pass
Samuel T. R. Revell, Jr.

1938

Melvin Borden
Robert C. Sheppard
Bernard O. Thomas, Jr.
John A. Wagner
Theodore E. Woodward

1939

Henry A. Briele
Dexter L. Reimann

1940

S. Ralph Andrews
Daniel C. Barker
Edwin O. Daue, Jr.
Joseph DeLuca
R. Louis Gibbs
Elizabeth Hooton McNeal
James R. Karns
A. R. Maryanov
Arthur E. Pollock
Susana I. Ramirez
Raymond C. V. Robinson
W. H. Townshend
William I. Wolff

1941

Raymond K. Thompson

1942

Van B. Bennett
Joseph Furnari
Theodore Kardash
E. R. Shipley

1943

Ruth Baldwin
David B. Gray
Albert Gubnitsky
Alfred T. Nelson
Josephine Renshaw
Edwin H. Stewart, Jr.
Stephen Van Lill

1944

Jose A. Alvarez de Choudens
Frank J. Brady
Charles E. Shaw

1945

William H. Frank
Joseph Ganey
Helen Greenleaf
William A. Holbrook, Jr.
Sumner Malone Parham

1946

Richard J. Cross
Jerome E. Kohn
Pomeroy Nichols

1947

Ben Gold. Jr.

1948

John Hankins
Nicholas Mallis
Merle S. Scherr
Kyle Swisher, Jr
F. J. Theuerkauf, Jr

1949

Leonard Bachman

FIG. 1. Top: Class of 1910. Bottom: Class of 1935.

Fig. 2. Top: Dr. William H. Triplett, left, President of the Alumni Association presents the Alumni Honor Award to Dr. Arnold D. Tuttle. Center: At the luncheon—Maj. Gen. Norman Kirk, USA (ret'd), Dr. Erasmus Kloman and Dr. Ralph Truitt. Bottom: Dr. John E. Savage left, receives from Dr. John A. Wagner a gift of rare books presented by Dr. Wilbur F. Skillman.

LUNCHEON

Seen at the luncheon:

Center: Mrs. Ruth Briscoe, Librarian Emeritus

Top left: Dr. R. Sumter Griffith, P & S, class of 1886, oldest living alumnus.

Top right: Dr. James T. Marsh, class of 1924, Westminster, Maryland

Bottom left: Drs. Edward Baum and Fred Steuart, B.M.C., class of 1895

Bottom right: Dr. William H. Triplett, B.M.C., class of 1911 and Dr. Samuel E. Proctor, class of 1932.

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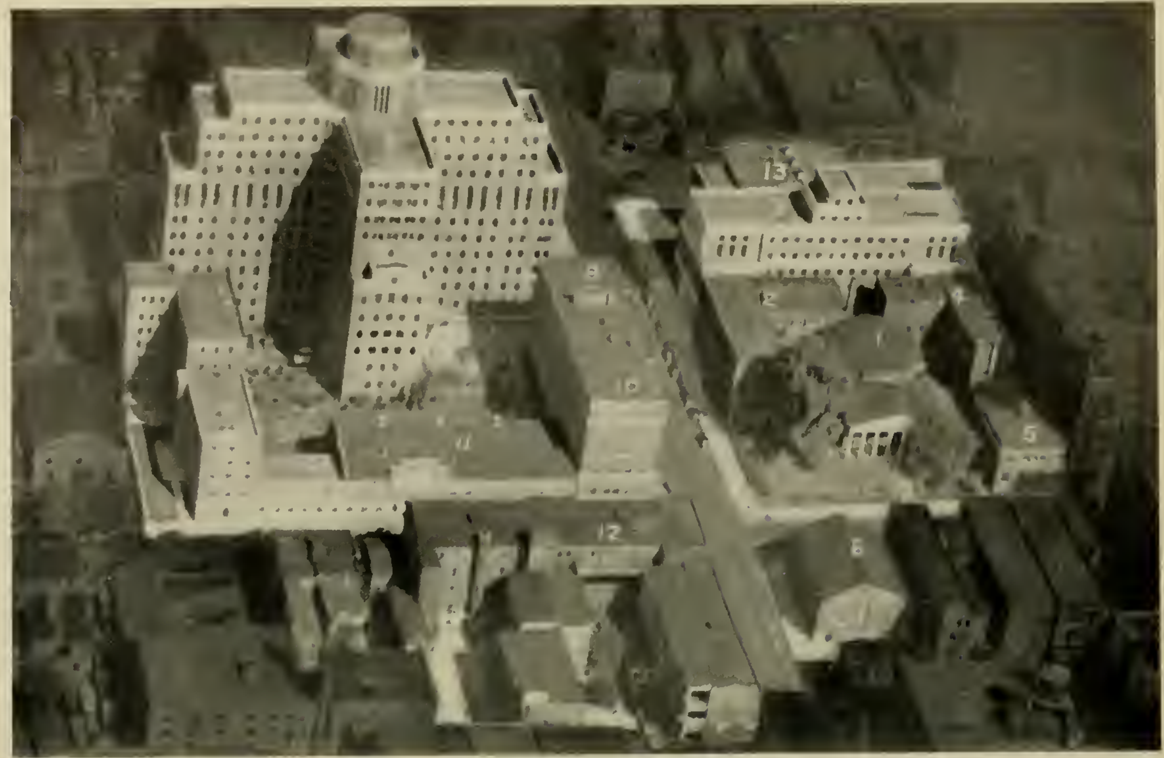

Baltimore Schools—University of Maryland

1. Original Medical Building
2. Laboratory Building, Medicine
3. Bressler Building, Medicine
4. Gray Laboratory, Student's Lounge, Medicine
5. Administration Building, College of Education, Baltimore Division
6. Medical Library
7. University Hospital
8. Nurses' Home, Medicine
9. School of Pharmacy
10. School of Dentistry
11. Dental Clinic
12. Out-Patient Clinics, Medicine
13. School of Law

BULLETIN

OF THE

SCHOOL *of* MEDICINE

UNIVERSITY OF MARYLAND

SEPTEMBER, 1950

1807-1856-1920

Announcements for

The One Hundred Forty-Fifth Academic Session
1950–1951

Catalogue of
The One Hundred Forty-Fourth Academic Session
1949–1950

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CALENDAR

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CALENDAR

ACADEMIC YEAR—SEPTEMBER 21, 1950 TO JUNE 9, 1951

1950			
September	11, 12, 13		Re-examinations for advancement

FIRST SEMESTER—September 21, 1950 to January 27, 1951

September	19	Tuesday	*Registration, payment of fees, freshmen & sophomores
September	20	Wednesday	*Registration, payment of fees, all other students
September	21	Thursday	Instruction begins at 8:30 a.m.
November	21	Tuesday	Instruction suspended at 5:00 p.m. Thanksgiving Holiday
November	27	Monday	Instruction resumed
December	21	Thursday	Instruction suspended at 5:00 p.m. Christmas Holiday
1951			
January	3	Wednesday	Instruction resumed
January	22	Monday	Midyear examinations
	to		*Payment of fees for second semester
January	27	Saturday	First semester completed, 2:00 p.m.

SECOND SEMESTER—January 29 to June 9, 1951

January	29	Monday	Instruction begins at 8:30 a.m.
February	21	Wednesday	Instruction suspended at 5:00 p.m.
February	22	Thursday	Holiday—Washington's Birthday
February	23	Friday	Instruction resumed
March	22	Thursday	Instruction suspended at 5:00 p.m. Easter Holiday
March	27	Tuesday	Instruction resumed
April	24	Tuesday	Juniors and Seniors excused to attend annual meetings
April	25	Wednesday	of the Medical & Chirurgical Faculty
May	21	Monday	Junior examinations begin
May	28	Monday	Junior examinations continue Sophomore and Freshman examinations begin
May	30	Wednesday	Holiday—Memorial Day
June	2	Saturday	Announcement of graduates
June	9	Saturday	Commencement Second Semester completed at 12:30 p.m.

PARTIAL CALENDAR FOR 1951-1952

1951			
September	10, 11, 12		Re-examinations for advancement
September	18	Tuesday	*Registration, payment of fees, freshmen & sophomores
September	19	Wednesday	*Registration, payment of fees, all other students
September	20	Thursday	Instruction begins at 8:30 a.m.

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* A student who fails to register prior to or within the day or days specified will be called upon to pay a late registration fee of five dollars ($5.00). The last day of registration with fee added to regular charges is Saturday of the week in which registration begins.

The offices of the registrar and comptroller are open daily from 9:00 A.M. to 4:00 P.M., and Saturday from 9:00 A.M. to 12:00 noon.

ORGANIZATION

THE UNIVERSITY OF MARYLAND

Harry Clifton Byrd, B.S., LL.D., D.Sc., *President and Executive Officer*

BOARD OF REGENTS

		Term Expires
William P. Cole, Jr., *Chairman*	Baltimore	1958
Stanford Z. Rothschild, *Secretary*	Baltimore	1952
J. Milton Patterson, *Treasurer*	Baltimore	1953
Peter W. Chichester	Frederick	1951
Edward F. Holter	Middletown	1952
E. Paul Knotts	Denton	1954
Charles P. McCormick	Baltimore	1957
Harry H. Nuttle	Denton	1950
Philip C. Turner	Parkton	1950
Millard E. Tydings	Havre de Grace	1951
Mrs. John L. Whitehurst	Baltimore	1956

Members of the Board are appointed by the Governor of the State for terms of nine years each, beginning the first Monday in June.

The President of the University of Maryland is, by law, Executive Officer of the Board.

A regular meeting of the Board is held the third Friday in each month, except during the months of July and August.

Each school has its own Faculty Council, composed of the Dean and members of its faculty; each Faculty Council controls the internal affairs of the group it represents.

The University has the following educational organizations:

At Baltimore

- The School of Dentistry
- The School of Law
- The School of Medicine
- The School of Nursing
- The School of Pharmacy
- The College of Education (Baltimore Division)

At College Park

- The College of Agriculture
- The College of Arts and Sciences
- The College of Business and Public Administration
- The College of Education
- The College of Engineering
- The College of Home Economics
- The Graduate School
- The College of Military Science
- The College of Physical Education, Recreation and Health
- The College of Special and Continuation Studies
- The Summer School

ADMINISTRATIVE OFFICERS

School of Medicine

H. C. Byrd, B.S., LL.D., D.Sc.	*President of the University*
H. Boyd Wylie, M.D.	*Dean*
O. G. Harne	*Assistant to the Dean*
Alma H. Preinkert, M.A.	*Registrar*
Edgar F. Long, Ph.D.	*Director of Admissions*

SCHOOL *of* MEDICINE

FACULTY OF MEDICINE

EMERITI

J. Frank Crouch, M.D.	Professor of Clinical Ophthalmology and Otology, Emeritus[6a]
Harry Friedenwald, A.B., M.D., D.H.L., D.Sc.	Professor of Ophthalmology, Emeritus[6]
J. M. H. Rowland, M.D., D.Sc., LL.D.	Professor of Obstetrics, Emeritus; Dean, Emeritus
Henry J. Walton, M.D.	Professor of Roentgenology, Emeritus
Page Edmunds, M.D.	Professor of Traumatic Surgery, Emeritus
Ruth Lee Briscoe	Librarian, Emeritus
Albertus Cotton, M.A., M.D.	Professor of Orthopaedic Surgery, and Roentgenology, Emeritus
Harvey G. Beck, M.D., D.Sc.	Professor of Clinical Medicine, Emeritus
Irving J. Spear, M.D.	Professor of Neurology, Emeritus
Carl L. Davis, M.D.	Professor of Anatomy, Emeritus
Arthur M. Shipley, M.D., D.Sc.	Professor of Surgery, Emeritus
Clyde A. Clapp, M.D.	Professor of Ophthalmology, Emeritus
Andrew C. Gillis, M.A., M.D., LL.D.	Professor of Neurology, Emeritus
Edgar B. Friedenwald, M.D.	Professor of Clinical Pediatrics, Emeritus

FACULTY BOARD

Dean H. Boyd Wylie, *Chairman*

O. G. Harne, *Secretary*

William R. Amberson
Franklin B. Anderson
James G. Arnold, Jr.
Walter A. Baetjer
Charles Bagley, Jr.
J. Edmund Bradley
Otto C. Brantigan
Howard M. Bubert
T. Nelson Carey
C. Jelleff Carr
Thomas R. Chambers
Carl Dame Clarke
Paul W. Clough
Richard G. Coblentz
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Charles N. Davidson
John DeCarlo, Jr.
Louis H. Douglass
C. Reid Edwards
Monte Edwards
Frederick P. Ferguson
Frank H. J. Figge
Jacob E. Finesinger
A. H. Finkelstein
Leon Freedom
Edgar B. Friedenwald
Thomas K. Galvin
Moses Gellman
Gordon E. Gibbs
Frank W. Hachtel
Edward J. Herbst
Cyrus F. Horine
J. Mason Hundley, Jr.
Elliott H. Hutchins
Edward S. Johnson
F. L. Jennings
C. Loring Joslin
James R. Karns
Walter L. Kilby
Edward A. Kitlowski
Vernon E. Krahl
John C. Krantz, Jr.
Louis A. M. Krause
Kenneth D. Legge
R. W. Locher
Edward A. Looper
William S. Love, Jr.
John F. Lutz
Charles W. Maxson
Zachariah Morgan
Theodore H. Morrison
Alfred T. Nelson
Thomas R. O'Rourk
C. W. Peake
D. J. Pessagno
H. R. Peters
Maurice C. Pincoffs

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[6] Died April 8, 1950.

[6a] Died April 20, 1950.

J. Morris Reese
Charles A. Reifschneider
Dexter L. Reimann
Harry M. Robinson, Sr.
Harry L. Rogers
Milton S. Sacks
Emil G. Schmidt
Andrew G. Smith
Dietrich C. Smith
R. Dale Smith
William H. Smith
Hugh R. Spencer
Thomas P. Sprunt
Edward Steers
W. Houston Toulson
J. McCullough Turner
Eduard Uhlenhuth
Henry F. Ullrich
Raymond E. Vanderlinde
Allen F. Voshell
John A. Wagner
Grant E. Ward
C. Gardner Warner
Huntington Williams
Walter D. Wise
Theodore E. Woodward
Thomas C. Wolff
Robert B. Wright
George H. Yeager
Waitman F. Zinn

ADVISORY COMMITTEE OF THE FACULTY

William R. Amberson
J. Edmund Bradley
Louis H. Douglass
C. Reid Edwards
Jacob E. Finesinger
Frank W. Hatchel
O. G. Harne, Assistant to the Dean, *Secretary*
J. Mason Hundley
Walter L. Kilby
F. Edwin Knowles, Jr.
John C. Krantz, Jr.
Alfred T. Nelson
Maurice C. Pincoffs
Emil G. Schmidt
Hugh R. Spencer
Eduard Uhlenhuth
H. Boyd Wylie, Dean *Chairman*

FACULTY OF MEDICINE

PROFESSORS

Myron S. Aisenberg, D.D.S., Professor of Pathology, School of Dentistry.
William R. Amberson, Ph.D., Professor of Physiology, and Head of the Department.
Charles Bagley, Jr., M.A., M.D., Professor of Neurological Surgery.
Joseph C. Biddix, Jr., D.D.S., Professor of Oral Diagnosis, School of Dentistry.
J. Edmund Bradley, M.D., Professor of Pediatrics, and Head of the Department.
Otto C. Brantigan, B.S., M.D., Professor of Surgical Anatomy, and Professor of Clinical Surgery.
T. Nelson Carey, M.D., Professor of Clinical Medicine.
Richard G. Coblentz, M.A., M.D., Professor of Clinical Neurological Surgery.
Edward C. Dobbs, D.D.S., Professor of Pharmacology, School of Dentistry.
Brice M. Dorsey, D.D.S., Professor of Oral Surgery, School of Dentistry.
Louis H. Douglass, M.D., Professor of Obstetrics, and Head of the Department.
Charles Reid Edwards, M.D., Professor of Surgery, and Acting Head of the Department.
Monte Edwards, M.D., Clinical Professor of Surgery and Professor of Proctology.

It is to be noted that for convenience of reference the names of the members of the Faculty are listed in the forepart of this catalogue in alphabetical order. The names are listed in order of seniority under each preclinical and clinical department of the school on subsequent pages.

On the lists of the Faculty of Medicine and Fellows and the Hospital and Dispensary staffs are given the names and positions assigned during the period July 1, 1949 to June 30, 1950 unless otherwise indicated. Changes are noted as follows:

[1] Appointments effective July 1, 1950.
[2] Promotion effective July 1, 1950.
[3] Resigned.
[4] Retired.
[5] Deaths.
[6] On leave.

Ray Ehrensberger, Ph.D., Professor of Speech, College of Arts and Sciences.
Frank H. J. Figge, Ph.D., Professor of Anatomy.
Jacob E. Finesinger, M.D., Professor of Psychiatry, and Head of the Department.
Edgar B. Friedenwald, M.D., Professor of Clinical Pediatrics.
Thomas K. Galvin, M.D., Clinical Professor of Gynecology.[1]
Grason W. Gaver, D.D.S., Professor of Dental Prosthetics, School of Dentistry.
Frank W. Hachtel, M.D., Professor of Bacteriology, and Head of the Department.
Harry C. Hull, M.D., Professor of Clinical Surgery.
J. Mason Hundley, Jr., M.A., M.D., Professor of Gynecology, and Head of the Department.
Elliott H. Hutchins, M.A., M.D., Professor of Surgery.
F. L. Jennings, M.D., Professor of Clinical Surgery.
C. Loring Joslin, M.D., Professor of Pediatrics.
Walter L. Kilby, M.D., Professor of Roentgenology, and Head of the Department.
Edward A. Kitlowski, A.B., M.D., Clinical Professor of Plastic Surgery.
John C. Krantz, Jr., Ph.D., D.Sc., Professor of Pharmacology, and Head of the Department.
Louis A. M. Krause, M.D., Professor of Clinical Medicine.
Kenneth D. Legge, M.D., Professor of Clinical Genito-Urinary Surgery.
Edward A. Looper, M.D., D.Oph., Professor of Otolaryngology, and Head of the Department.
Theodore H. Morrison, M.D., Clinical Professor of Gastro-Enterology.
Alfred T. Nelson, M.D., Professor of Anaesthesiology, and Chairman of the Department[1a]
Ernest B. Nuttall, D.D.S., Professor of Crown and Bridge, School of Dentistry.
Thomas R. O'Rourk, M.D., Professor of Otolaryngology.
D. J. Pessagno, A.B., M.D., Professor of Clinical Surgery.
H. Raymond Peters, A.B., M.D., Professor of Clinical Medicine.
Maurice C. Pincoffs, B.S., M.D., Professor of Medicine, and Head of the Department.
Kyrle W. Preis, D.D.S., Professor of Orthodontics, School of Dentistry.[1]
Kenneth V. Randolph, D.D.S., Professor of Operative Dentistry, School of Dentistry.
Charles A. Reifschneider, M.D., Clinical Professor of Traumatic Surgery.
Harry L. Rogers, M.D., Clinical Professor of Orthopaedic Surgery.
Harry M. Robinson, Sr., M.D., Professor of Dermatology.
Emil G. Schmidt, Ph.D., LL.B., Professor of Biological Chemistry, and Head of the Department.
Dietrich Conrad Smith, Ph.D., Professor of Physiology.
Hugh R. Spencer, M.D., Professor of Pathology, and Head of the Department.
Thomas P. Sprunt, A.B., M.D., Professor of Clinical Medicine.
W. Houston Toulson, M.Sc., M.D., Professor of Genito-Urinary Surgery.
Eduard Uhlenhuth, Ph.D., Professor of Anatomy, and Head of the Department.
Allen Fiske Voshell, A.B., M.D., Professor of Orthopaedic Surgery.
Huntington Williams, M.D., Dr. P.H., Professor of Hygiene and Public Health.
Walter D. Wise, M.D., Professor of Surgery.
George H. Yeager, B.S., M.D., Professor of Clinical Surgery, and Director of Clinical Research.
Waitman F. Zinn, M.D., Professor of Otolaryngology.

[1a] Appointment effective July 13, 1949.

ASSOCIATE PROFESSORS

Franklin R. Anderson, M.D., Associate Professor of Otolaryngology.
Merle Ansberry, Ph.D., Associate Professor of Speech, College of Arts and Sciences.
James G. Arnold, Jr., M.D., Associate Professor of Neurological Surgery.
H. M. Bubert, M.D., Associate Professor of Medicine.
C. Jelleff Carr, Ph.D., Associate Professor of Pharmacology.
Thomas R. Chambers, A.B., M.D., Associate Professor of Surgery.
Carl Dame Clarke, Associate Professor of Art as Applied to Medicine.
Charles N. Davidson, M.D., Associate Professor of Roentgenology.
Ross Davies, M.D., Associate Professor of Hygiene and Public Health.
J. S. Eastland, M.D., Associate Professor of Medicine.
A. H. Finkelstein, M.D., Associate Professor of Pediatrics.
Russel S. Fisher, M.D., Associate Professor of Legal Medicine.[1]
Leon Freedom, M.D., Associate Professor of Neurology.
Moses Gellman, B.S., M.D., Associate Professor of Orthopaedic Surgery.
Gordon E. Gibbs, M.D., Associate Professor of Clinical Research.[1]
Lewis P. Gundry, M.D., Associate Professor of Medicine.
O. G. Harne, Associate Professor of Anatomy, and Asst. to the Dean.
Hugh H. Hicks, D.D.S., Associate Professor of Periodontology, School of Dentistry.
Cyrus F. Horine, M.D., Associate Professor of Surgery.
Albert Jaffe, M.D., Associate Clinical Professor of Pediatrics.
Edward S. Johnson, M.D., Associate Professor of Surgery.
Vernon E. Krahl, B.S., M.S., Ph.D., Associate Professor of Anatomy.
Frederick T. Kyper, M.D., D.Sc., Associate Professor of Otolaryngology.
R. W. Locher, M.D., Associate Professor of Clinical Surgery.
William S. Love, Jr., A.B., M.D., Associate Professor of Medicine.
Charles W. Maxson, M.D., Associate Professor of Surgery.
Walter C. Merkel, A.B., M.D., Associate Professor of Pathology.
Samuel Morrison, A.B., M.D., Associate Professor of Medicine, Associate Professor of Gastro-enterology.
James W. Nelson, M.D., Associate Professor of Surgery.
H. Whitman Newell, M.D., Associate Professor of Psychiatry.
C. W. Peake, M.D., Associate Professor of Surgery.
J. Morris Reese, M.D., Associate Professor of Obstetrics.
Dexter L. Reimann, B. S., M.D., Associate Professor of Pathology.
Benjamin S. Rich, A.B., M.D., Associate Professor of Otolaryngology.
Milton S. Sacks, M.D., Associate Professor of Medicine and Head of Clinical Pathology, Associate in Pathology.
Frederick B. Smith, M.D., Associate Clinical Professor of Pediatrics.
R. Dale Smith, Ph. D., Associate Professor of Anatomy.
William H. Smith, M.D., Associate Professor of Clinical Medicine.
Edward Steers, Ph.D., Associate Professor of Bacteriology.
Lewis C. Toomey, D.D.S., Associate Professor of Oral Surgery, School of Dentistry.
I. Ridgeway Trimble, M.D., Associate Professor of Surgery.
Henry F. Ullrich, M.D., D.Sc., Associate Professor of Orthopaedic Surgery.
John A. Wagner, B.S., M.D., Associate Professor of Pathology.
W. Wallace Walker, M.D., Associate Professor of Surgery and Surgical Anatomy.
Grant E. Ward, A.B., M.D., Associate Professor of Surgery and Oral Surgery.
C. Gardner Warner, A.B., M.D., Associate Professor of Pathology.

William H. F. Warthen, A.B., M.D., Associate Professor of Hygiene & Public Health.
Glenn S. Weiland, Ph.D., Associate Professor of Biochemistry.
T. Conrad Wolff, M.D., Associate Professor of Medicine, and Head of the Division of Physical Diagnosis.
Theodore E. Woodward, M.D., Associate Professor of Medicine
Robert B. Wright, B.S., M.D., Associate Professor of Pathology.

ASSISTANT PROFESSORS

Thurston R. Adams, M.D., Assistant Professor of Surgery and Proctology.
Donald J. Barnett, M.D., Assistant Professor of Roentgenology.
H. F. Bongardt, M.D., Assistant Professor of Surgery.
Leo Brady, A.B., M.D., Assistant Professor of Gynecology.
Simon H. Brager, M.D., Assistant Professor of Surgery and Proctology.
Beverley C. Compton, A.B., M.D., Assistant Professor of Gynecology.
Ernest I. Cornbrooks, Jr., A.B., M.D., Assistant Professor of Gynecology.
Edward F. Cotter, M.D., Assistant Professor of Medicine, Associate in Neurology.
J. G. N. Cushing, M.D., Assistant Professor of Psychiatry.
John DeCarlo, A.B., M.D., Assistant Professor of Roentgenology.[1a]
William K. Diehl, M.D., Assistant Professor of Gynecology.
Everett S. Diggs, B.S., M.D., Assistant Professor of Gynecology.
John S. Dumler, B.S., M.D., Assistant Professor of Gynecology.
William W. Elgin, M.D., Assistant Professor of Psychiatry.
Francis A. Ellis, A.B., M.D., Assistant Professor of Dermatology.
Maurice Feldman, M.D., Assistant Professor of Gastro-Enterology.
Frederick P. Ferguson, Ph.D., Assistant Professor of Physiology.
Jerome Fineman, M.D., Assistant Professor of Pediatrics.
Wetherbee Fort, M.D., Assistant Professor of Medicine.
Frank J. Geraghty, A.B., M.D., Assistant Professor of Medicine.
Francis W. Gillis, M.D., Assistant Professor of Genito-Urinary Surgery.
Samuel S. Glick, M.D., Assistant Professor of Pediatrics.
Harry Goldsmith, M.D., Assistant Professor of Psychiatry.
Albert E. Goldstein, M.D., Assistant Professor of Pathology.
George Govatos, A.B., M.D., Assistant Professor of Surgery.
Edward J. Herbst, Ph.D., Assistant Professor of Biological Chemistry.
John F. Hogan, M.D., Assistant Professor of Genito-Urinary Surgery.
Harry K. Iwamoto, Ph.D., Assistant Professor of Pharmacology.
D. Frank Kaltreider, A.B., M.D., Assistant Professor of Obstetrics.
Fayne A. Kayser, M.D., Assistant Professor of Rhinology and Laryngology.
F. Edwin Knowles, Jr., M.D., Assistant Professor of Ophthalmology and Chairman of the Department.
H. Vernon Langeluttig, M.D., Assistant Professor of Medicine.
C. Edward Leach, M.D., Assistant Professor of Medicine.[2]
Philip L. Lerner, M.D., Assistant Professor of Neurology.
Ephriam T. Lisansky, M.D., Assistant Professor of Medicine and Associate in Psychiatry.[2]
Hans W. Loewald, M.D., Assistant Professor of Psychiatry.

[1a] Appointment effective Jan. 1, 1950.

John F. Lutz, A.B., M.D., Assistant Professor of Anatomy.
Stanley H. Macht, B.S., M.D., Assistant Professor of Roentgenology.[3a]
Henry J. L. Marriott, A.M., B.M., Assistant Professor of Medicine.
Howard B. Mays, M.D., Assistant Professor of Genito-Urinary Surgery and Instructor in Pathology.
W. Raymond McKenzie, M.D., Assistant Professor of Otolaryngology.
Zachariah Morgan, M.D., Assistant Professor of Gastro-Enterology.
Hugh B. McNally, B.S., M.D., Assistant Professor of Obstetrics.[2]
Harry M. Murdock, B.S., M.D., Assistant Professor of Psychiatry.
George McLean, M.D., Assistant Professor of Medicine.
M. Alexander Novey, A.B., M.D., Assistant Professor of Obstetrics.
Samuel T. R. Revell, Jr., M.D., Assistant Professor of Medicine.[2]
I. O. Ridgely, M.S., M.D., Assistant Professor of Surgery.
William F. Rienhoff, M.D., Assistant Professor of Surgery.
Harry M. Robinson, Jr., B.S., M.D., Assistant Professor of Dermatology, Associate in Medicine.
Irving Rothchild, Ph.D., Assistant Professor of Physiology.
John E. Savage, B.S., M.D., Assistant Professor of Obstetrics.
Kathyrn L. Schultz, M.D., Assistant Professor of Psychiatry.
Theodore A. Schwartz, M.D., Assistant Professor of Otolaryngology.[2]
William M. Seabold, M.D., Assistant Professor of Pediatrics.
William B. Settle, M.D., Assistant Professor of Surgical Anatomy and Associate in Surgery.
Isadore A. Siegel, A.B., M.D., Assistant Professor of Obstetrics.
Andrew G. Smith, Ph.D., Assistant Professor of Bacteriology.
Edward P. Smith, M.D., Ph.G., Assistant Professor of Gynecology.
Sol Smith, M.D., Assistant Professor of Medicine.
J. McCullough Turner, Ph.D., Assistant Professor of Physiology.[1a]
Raymond E. Vanderlinde, A.B., Ph.D., Assistant Professor of Biological Chemistry.[1b]
Philip S. Wagner, M.D., Assistant Professor of Psychiatry.
Gibson J. Wells, M.D., Assistant Professor of Pediatrics.
Milton J. Wilder, M.D., Assistant Professor of Orthopedic Surgery.

ASSOCIATES

Conrad B. Acton, M.D., Associate in Medicine.
Marie A. Andersch, Ph.D., Associate in Medicine.
J. Tyler Baker, B.S., M.D., Associate in Obstetrics.[1]
Margaret B. Ballard, M.D., Associate in Obstetrics.
Charles P. Barnett, A.B., M.D., Associate in Pathology.[2]
Edmund G. Beacham, M.D., Associate in Medicine.[2]
Eugene S. Bereston, A.B., M.D., Associate in Dermatology.
Harry C. Bowie, B.S., M.D., Associate in Surgical Anatomy.[2]
Kenneth B. Boyd, A.B., M.D., Associate in Gynecology and Assistant in Obstetrics.
Frank J. Brady, M.D., Associate in Anaesthesiology.[1c]

[1a] Appointment effective August 1, 1950
[1b] Appointment effective Sept. 1, 1950.
[1c] Appointment effective Jan. 1, 1950.
[3a] Resigned Dec. 31, 1949.

V. V. Brunst, Sc.D., Research Associate in Anatomy.
Harold H. Burns, M.D., Associate in Surgery.
M. Paul Byerly, M.D., Associate in Medicine.
Richard A. Carey, M.D., Associate in Medicine.[1]
Osborne D. Christensen, M.D., Associate in Obstetrics.
Edward R. Dana, A.B., M.D., Associate in Roentgenology.[1]
Kathryn Dice, Ed.D., Associate in Clinical Psychology.
Francis G. Dickey, M.D., Associate in Medicine.
D. McClelland Dixon, M.D., Associate in Obstetrics and Instructor in Pathology.
Stanley H. Durlacher, M.D., Associate in Legal Medicine.[1]
J. J. Erwin, M.D., Associate in Gynecology.
L. K. Fargo, M.D., Associate in Genito-Urinary Surgery.
William L. Fearing, M.D., Associate in Neurology.
Donald E. Fisher, M.D., Associate in Pathology.[2]
Samuel L. Fox, M.D., Associate in Otolaryngology, and Instructor in Physiology.[1]
Henry C. Freimuth, Ph.D., Associate in Legal Medicine.[1a]
William L. Garlick, A.B., M.D., Associate in Surgery.
Robert G. Grenell, B.A., M.Sc., Ph.D., Research Associate in Psychiatry.[1]
Alvin J. Hartz, A.B., M.D., Associate in Medicine.[2]
Raymond F. Helfrich, A.B., M.D., Associate in Surgery.
W. Grafton Herspberger, M.D., Associate in Medicine.
John T. Hibbitts, M.D., Associate in Gynecology.
Henry W. D. Holljes, M.D., Associate in Medicine.
Z. Vance Hooper, M.D., Associate in Gastro-Enterology.
Clewell Howell, B.S., M.D., Associate in Pediatrics.
Benjamin H. Isaacs, A.B., M.D., Associate in Rhinology and Laryngology.
Meyer W. Jacobson, M.D., Associate in Medicine.
Joseph V. Jerardi, B.S., M.D., Associate in Surgery.
Hugh J. Jewett, M.D., Associate in Genito-Urinary Surgery.
Arthur Karfgin, B.S., M.D., Associate in Medicine.
James R. Karns, B.S., M.D., Associate in Medicine, and Physician in Charge of Medical Care of Medical Students.[2]
Joseph I. Kemler, M.D., Associate in Ophthalmology.
Elizabeth LaForge, M.S.S., Associate in Psychiatric Social Work.
Samuel Legum, M.D., Associate in Medicine.
H. Edmund Levin, M.D., Associate in Bacteriology.
Kurt Levy, M.D., Associate in Medicine.
William D. Lynn, A.B., M.D., Research Associate in Surgery.[1]
G. Bowers Mansdorfer, B.S., M.D., Associate in Pediatrics.
I. H. Maseritz, M.D., Associate in Orthopaedic Surgery.
Karl F. Mech, B.S., M.D., Associate in Anatomy and Instructor in Pathology.
George G. Merrill, M.D., Associate in Neurology.
Lyle J. Millan, M.D., Associate in Genito-Urinary Surgery.
Frank K. Morris, A.B., M.D., Associate in Gynecology.
J. Huff Morrison, B.S., M.D., Associate in Obstetrics.[2]
S. Edwin Muller, M.D., Associate in Medicine.
Ross Z. Pierpont, M.D., Associate in Surgical Anatomy, and Assistant in Surgery.[2]
Herbert E. Reifschneider, A.B., M.D., Associate in Surgery and Surgical Anatomy.

[1a] Appointment effective Oct. 15, 1949.

Robert A. Reiter, M.D., Associate in Medicine.
R. C. V. Robinson, M.D., Associate in Dermatology.
Sidney Scherlis, M.D., Associate in Medicine.
William M. Seabold, A.B., M.D., Associate in Pediatrics.
Lawrence M. Serra, M.D., Associate in Medicine.
A. Albert Shapiro, B.S., M.D., Associate in Dermatology.
Arthur G. Siwinski, A.B., M.D., Associate in Surgery.
Benedict Skitarelic, A.B., M.D., Associate in Pathology.
Harry A. Teitlebaum, B.S., M.D., Ph.D., Associate in Neurology.
Wilfred H. Townshend, Jr., A.B., M.D., Associate in Medicine.[2]
Isadore Tuerk, M.D., Associate in Psychiatry.
William K. Waller, M.D., Associate in Medicine.
Austin H. Wood, M.D., Associate in Genito-Urinary Surgery.
Israel Zeligman, A.B., M.D., Associate in Dermatology.

LECTURERS

Amedeo S. Marrazzi, M.D., Lecturer in Pharmacology.
Joseph M. Miller, M.D., Lecturer in Surgery.
William H. Summerson, Ph.D., Lecturer in Biological Chemistry[1]

INSTRUCTORS

A. Russell Anderson, M.D., Instructor in Psychiatry.
Leon Ashman, M.D., Instructor in Medicine.
Robert E. Bauer, A.B., M.D., Instructor in Medicine.[2]
Harry McB. Beck, M.D., Instructor in Gynecology, and Assistant in Obstetrics.[1]
Robert Z. Berry, A.B., M.D., Instructor in Otolaryngology.
Thomas S. Bowyer, A.B., M.D., Instructor in Gynecology and Assistant in Obstetrics.
Charles E. Brambel, A.M., Ph.D., Instructor in Medicine.[1]
George H. Brouillet, B.S., M.D., Instructor in Surgery.
Ann Virginia Brown, A.B., Instructor in Biological Chemistry.
J. E. Brumback Jr., B.S., M.D., Instructor in Ophthalmology.
William J. Bryson, A.B., M.D., Instructor in Pathology.
William R. Bundick, M.D., Instructor in Dermatology.[1]
Lucile J. Caldwell, M.D., Instructor in Dermatology.
Enoch Calloway, Jr., A.B., M.D., Instructor in Psychiatry.[1]
Joseph P. Cappuccio, D.D.S., Instructor in Oral Surgery, School of Dentistry.
Thomas A. Christensen, A.B., M.D., Instructor in Pediatrics.
Jonas Cohen, A.B., M.D., Instructor in Medicine.
Morris M. Cohen, M.D., Instructor in Dermatology.[1]
Joseph M. Cordi, M.D., Instructor in Pediatrics.
Richard J. Cross, B.S., M.D., Instructor in Ophthalmology, and Assistant in Otolaryngology.[1]
Raymond M. Cunningham, A.B., M.D., Instructor in Anatomy and Proctology, Assistant in Surgery.
George H. Davis, B.S., M.D., Instructor in Obstetrics.[2]
John R. Davis, M.D., Instructor in Medicine.
W. Allen Deckert, A.B., M.D., Instructor in Gynecology and Assistant in Surgery.
John B. DeHoff, M.D., Instructor in Medicine.
William A. Dodd, M.D., Instructor in Gynecology, and Assistant in Obstetrics.[1]

Charles H. Doeller, Jr., A.B., M.D., Instructor in Gynecology, and Assistant in Obstetrics.
William C. Duffy, A.B., M.D., Instructor in Gynecology.
Ernest S. Edlow, A.B., M.D., Instructor in Gynecology.
Philip D. Flynn, M.D., Instructor in Medicine.
Paul N. Friedman, A.B., M.D., Instructor in Ophthalmology.
Audry M. Funk, A.B., Instructor in Medicine.
L. Calvin Gareis, B.S., M.D., Instructor in Pathology, and Obstetrics,[2] Assistant in Gynecology.
Jason H. Gaskel, M.D., Instructor in Orthopaedic Surgery.
H. L. Granoff, A.B., M.D., Instructor in Gynecology.
Ernest G. Guy, M.D., Instructor in Medicine.
Isaac Gutman, Instructor in Orthopaedic Surgery.[1]
John S. Haines, M.D., Instructor in Genito-Urinary Surgery.
Samuel J. Hankin, M.D. Instructor in Medicine.
Charles W. Hawkins, M.D., Instructor in Anatomy.[2]
Mary L. Hayleck, M.D., Instructor in Pediatrics.
Robert F. Healy, M.D., Instructor in Surgery.
Donald B. Hebb, M.D., Instructor in Proctology and Assistant in Surgery.
William G. Helfrich, B.S., M.D., Instructor in Medicine.
L. Ann Hellen, B.S., Instructor in Medicine.
Benjamin Highstein, M.D., Instructor in Dermatology.
Mark B. Hollander, A.B., M.D., Instructor in Dermatology and Syphilology.
Calvin Hyman, M.D., Instructor in Surgery.
Conrad L. Inman, D.D.S., Instructor in Anesthesiology, School of Dentistry.
Edward S. Kallins, B.S., M.D., Instructor in Medicine.
Marshall I. Kader, D.D.S., Instructor in Oral Surgery,[1] School of Dentistry.
William H. Kammer, Jr., A.B., M.D., Instructor in Medicine.
Harry F. Kane, M.D., Instructor in Gynecology.
Theodore Kardash, B.S., M.D., Instructor in Gynecology and Pathology.
Walter E. Karfgin, M.D., Instructor in Medicine.
Clyde F. Karns, B.S., M.D., Instructor in Surgery.
Leon A. Kochman, M.D., Instructor in Medicine.[1]
Schuyler G. Kohl, B.S., M.D., Instructor in Obstetrics.[2]
A. Kremen, A.B., M.D., Instructor in Ophthalmology.
Louis J. Kroll, A.B., M.D., Instructor in Medicine.
Arnold F. Lavenstein, Instructor in Pediatrics.
Algert P. Lazauskas, D.D.S., Instructor in Oral Surgery,[1] School of Dentistry.
V. Harwood Link, M.D., Instructor in Dermatology.[1]
F. Ford Loker, B.S., M.D., Instructor in Surgery.
H. Patterson Mack, M.D., Instructor in Anatomy.[1]
Helen I. Maginnis, M.D., Instructor in Gynecology.
Louis O. J. Manganiello, A.B., M.D., Instructor in Anatomy,[1] Research Fellow, Neurosurgery.
William C. Manion, B.S., M.D., Instructor in Pathology.[1]
Charles B. Marek, M.D., Instructor in Gynecology.
Joseph H. Marshall, M.D., Instructor in Psychiatry.
Marion W. Mathews, M.S., M.D., Instructor in Psychiatry.[1b]
D. J. McHenry, B.S., M.D., Instructor in Ophthalmology.

[1b] Appointment effective Sept., 1, 1950

José Medina, D.D.S., Instructor in Oral Surgery,[1] School of Dentistry.
Margaret E. Mellott, B.S., Instructor in Biochemistry.[3a]
Israel P. Meranski, B.S., M.D., Instructor in Pediatrics.
J. Duer Moores, B.S., M.D., Instructor in Surgery.
Joseph E. Muse, Jr., B.S., M.D., Instructor in Medicine.
Ruth Musser, M.S., Instructor in Pharmacology.
John A. Myers, M.E.E., M.D., Instructor in Medicine, Assistant in Gastro-Enterology.
Francis J. McLaughlin, M.D., Instructor in Psychiatry.
Pomeroy Nichols, Jr., M.D., Instructor in Anatomy.[1a]
Samuel Novey, M.D., Instructor in Psychiatry.
M. Paul Padget, M.D., Instructor in Medicine.
Richard H. Pembroke, Jr., A.B., M.D., Instructor in Psychiatry.
Patrick C. Phelan, Jr., Instructor in Anatomy and Surgery.
Samuel E. Proctor, A.B., M.D., Instructor in Surgery.
J. Emmett Queen, M.D., Instructor in Medicine.[1]
Phoebe Rich, M.S.S., Instructor in Psychiatric Social Work.
Daniel R. Robinson, M.D., Instructor in Surgery.
Seymour W. Rubin, M.D., Instructor in Pathology.
William J. Rysanek, Jr., M.D., Instructor in Gynecology.
Clarence P. Scarborough, M.D., Instructor in Surgery.
John F. Schaefer, B.S., M.D., Instructor in Surgery.
J. King B. E. Seegar, Jr., A.B., M.D., Instructor in Obstetrics.[2]
Joseph C. Sheehan, B.S., M.D., Instructor in Gynecology.
Robert C. Sheppard, M.D., Instructor in Surgery.
E. Roderick Shipley, A.B., M.D., Instructor in Surgery.
Albert J. Shochat, B.S., M.D., Instructor in Gastro-Enterology.
Ruby A. Smith, B.S., M.D., Instructor in Ophthalmology.
Merrill J. Snyder, B.S., Instructor in Bacteriology.[1]
Melchijah Spragins, B.S., M.D., Instructor in Pediatrics.
Edwin H. Stewart, Jr., M.D., Instructor in Surgery.
Cleo D. Stiles, M.D., instructor in Ophthalmology.
William T. Supik, M.D., Insrtuctor in Proctology.
Raymond K. Thompson, B.S., M.D., Instructor and Director of Research in Neurological Surgery.
Robert B. Tunney, A.B., M.D., Instructor in Gynecology.
William D. VandeGrift, M.D., Instructor in Pathology.
Edmond G. Vanden Bosche, D.D.S., Instructor in Oral Surgery,[1] School of Dentistry.
Harold L. Vyner, M.D., Instructor in Psychiatry.
Frederick J. Vollmer, B.S., M.D., Instructor in Medicine.
Daniel Wilfson, Jr., A.B., M.D., Instructor in Medicine.
C. Herman Williams, M.D., Instructor in Medicine.[1]

ASSISTANTS

A. Maynard Bacon, Jr., B.S., M.D., Assistant in Pediatrics.
Ruth W. Baldwin, M.D., Assistant in Pediatrics and Director of the Pediatrics Seizure clinic.[1]

[3a] Resigned Jan. 31, 1950.
[1a] Appointment effective Feb. 1, to May 31, 1950.

Harry McB. Beck, A.B., M.D., Assistant in Obstetrics.[1]
Walter J. Benavent, B.S., M.D., Assistant in Plastic Surgery.[1]
Jane L. Bleakley, Assistant in Art as Applied to Medicine.
Frances C. Brown, A.B., Assistant in Physiology.
Joseph G. Bird, A.B., M.D., Assistant in Pharmacology, and Medicine.[1]
A. V. Buchness, A.B., M.D., Assistant in Surgery.
Lester H. Caplan, M.D., Assistant in Pediatrics.
John W. Chambers, M.D., Assistant in Surgery, and Neurological Surgery.
L. T. Chance, M.D., Assistant in Surgery.
Raymond J. Clayton, Jr., Assistant in Art as Applied to Medicine.[1a]
James N. Cianos, M.D., Assistant in Surgery.
Sarah Cook, A.B., M.D., Assistant Director Post Graduate Medicine,[2] and Assistant in Pediatrics.[1]
Donald D. Cooper, M.D., Assistant in Pediatrics.
Samuel H. Culver, M.D., Assistant in Surgery.
E. Hollister Davis, A.B., M.D., Assistant in Anaesthesia.
Michael L. DeVincentis, B.S., M.D., Assistant in Surgery.
William A. Dodd, B.S., M.D., Assistant in Obstetrics.[1]
William C. Dunnigan, A.B., M.D., Assistant in Surgery.
Maurice Feldman, Jr., A.B., M.D., Assistant in Medicine.
Morris A. Fine, M.D., Assistant in Medicine and Genito-Urinary Surgery.
Richard M. Garrett, M.D., Assistant in Surgery and Surgical Anatomy.[1]
William R. Geraghty, B.S., M.D., Assistant in Surgery.
Louis F. Goodman, M.D., Assistant in Surgery.
Charles W. Hawkins, M.D., Assistant in Genito-Urinary Surgery.
Sylvia Himmelfarb, A.B., Assistant in Physiology.
John H. Hirschfeld, M.D., Assistant in Otolaryngology.
John V. Hopkins, M.D., Assistant in Orthopaedic Surgery.
Rollin C. Hudson, M.D., Assistant in Medicine.
Everett D. Jones, M.D., Assistant in Orthopaedic Surgery.[1]
Irvin B. Kemich, M.D., Assistant in Medicine.[1]
Lauriston L. Keown, M.D., Assistant in Medicine.[1b]
Irvin P. Klemkowski, B.S., M.D., Assistant in Obstetrics.
Raymond M. Lauer, M.D., Assistant in Medicine.[1]
Alfred S. Lederman, Assistant in Gastro-Enterology.
Frank E. Leslie, A.B., M.D., Assistant in Medicine.
William D. Lynn, A.B., M.D., Assistant in Surgery, and Assistant Director Surgical Research.
W. Kenneth Mansfield, Jr., M.D., Assistant in Obstetrics.
Clarence W. Martin, M.D., Assistant in Obstetrics.[1]
Howard B. McElwain, M.D., Assistant in Surgery.
James J. Nolan, B.S., M.D., Assistant in Medicine.
John C. Osborne, M.D., Assistant in Medicine.
Frank J. Otanasek, M.D., Assistant in Neurological Surgery.
Ross Z. Pierpont, M.D., Assistant in Surgery.
Susan R. Pincoffs, R.N., Assistant in Medicine.
Hazel Y. Pruitt, Assistant in Bacteriology.

[1a] Appointment effective May 1, 1950.
[1b] Appointment effective Feb. 9, 1950.

Frederick M. Reese, A.B., M.D., Assistant in Ophthalmology.
James Russo, M.D., Assistant in Anaesthesiology.
Mary Katherine Scarborough, Assistant in Art as Applied to Medicine.
Charles W. Shaw, M.D., Assistant in Medicine.[1]
Jerome Sherman, M.D., Assistant in Medicine.
Elizabeth Smith, M.S.S., Assistant in Psychiatric Social Work.
O. Walter Spurrier, M.D., Assistant in Pediatrics.
Thomas McClelland Stevenson, Assistant in Art as Applied to Medicine.
Stuart D. Sunday, M.D., Assistant in Medicine.
Adam Swiss, M.D., Assistant in Medicine.
T. J. Touhey, M.D., Assistant in Surgery.
Stephen J. Van Lill, III, A.B., M.D., Assistant in Medicine.
Arthur Ward, M.D., Assistant in Otolaryngology.[1]
William Earl Weeks, M.D., Assistant in Pediatrics.
J. Carlton Wich, B.S., M.D., Assistant in Pediatrics.
Marcella Wiseman, M.S.S., Assistant in Psychiatric Social Work.
Howard L. Zupnik, M.D., Assistant in Surgery.

FELLOWS

Phillip R. Apffel, M.D., Fellow in Psychiatry.
Frederick K. Bell, Ph.D., Fellow in Pharmacology.[1e]
John M. Bloxom, Jr., M.D., National Cancer Institute Trainee.[1]
George W. Bradford, M.D., Baltimore Rh Laboratory, Fellow in Medicine.
James S. Browne, M.D., Fellow in Neurosurgery.[1]
Raymond M. Burgison, M.S., Fellow in Pharmacology.
Robert S. Cato, A.B., M.D., Fellow in Roentgenology.[1b]
Robert M. N. Crosby, M.D., Hitchcock Fellow in Neurological Surgery.
Garret E. Deane, M.D., Fellow in Pediatrics.[1]
Richard F. C. Egan, M.S., John F. B. Weaver Fellow in Physiology.[1]
Mary S. Fassel, A.B., Fellow in Pharmacology.[1m]
Martin K. Gorten, M.D., Baltimore Rh Typing Laboratory Fellow in Medicine.[1]
David B. Gray, M.D., National Cancer Institute Trainee.[1]
John B. Harman, B.S., Emerson Fellow in Pharmacology.[1m]
Hans Hoch, Ph.D., Research Fellow in Physiology.[1f]

[1a] Appointment effective June 1, to July 31, 1950; September 1 to September 15, 1950
[1b] Appointment effective Nov. 1, 1950.
[1c] Appointment effective April 1, 1950.
[1d] Appointment effective January 1, 1950.
[1e] Appointment effective September 1, 1949 to June 10, 1950.
[1f] Appointment effective Feburary 1, 1950 to May 31, 1950.
[1g] Appointment effective July 1, 1949 to September 30, 1949.
[1h] Appointment effective September 1, 1949 to August 31, 1950.
[1i] Appointment effective October 1, 1950 to September 30, 1951.
[1j] Appointment effective October 1, 1949.
[1k] Appointment effective September 1, 1950, to August 31, 1951.
[1l] Appointment effective June 1 to August 20, 1950.
[1m] Appointment effective September 1, 1950 to September 1, 1951.

Dorothy H. Hubbard, Weaver Fellow in Biological Chemistry.
Dewitt T. Hunter, John F. B. Weaver Fellow in Anatomy.[1a]
Frederick Go-Kiatsu, B.S., M.D., Fellow in Pediatrics.
N. Joyce Knapp, A.B., Eli Lilly Fellow in Pharmacology.[1j]
William E. Loechel, Albert E. Goldstein Fellow in Anatomical Art.[1d]
Go Lu, M.D., Fellow in Pharmacology.[1k]
Louis O. J. Manganiello, A.B., M.D., Fellow in Neurosurgery.
Arlie R. Mansberger, Jr., M.D., Research Fellow in Surgery.
Marion A. Marfy, M.A., Fellow in Clinical Psychology.
Suzanne Mohler, B.S., Fellow in Psychiatry.
J. Pomeroy Nichols, M.D., Fellow in Neurological Surgery.[1n]
Aaron Podolnick, B.S., M.D., Fellow in Psychiatry.
Albert M. Powell, M.D., Fellow in Pediatrics.[1]
Ruth Rabinovitch, A.B., M.D., Fellow in Psychiatry.
Robert Simonoff, Ph.D., Ohio Chemical Co., Fellow in Pharmacology.[1d]
George W. Smith, M.D., Hitchcock Fellow in Neurosurgery.[1]
C. L. Spurling, M.D., Baltimore Rh Laboratory Fellow in Medicine.[1]
William Stark, M.D., Fellow in Psychiatry.
Thomas A. Stebbins, A.B., Medical Illustrator in Gynecology.
Martin W. Treiber, John F. B. Weaver Fellow in Physiology.[1l]
Edward B. Truitt, B.S., Fellow American Foundation for Pharmaceutical Education.[1k]
Roy B. Turner, M.D., Fellow in Neurosurgery.[1n]
Robert T. Walker, M.D., Fellow in Medicine.
Geraldine F. Wolfe, B.S., U.S.P.H. Fellow in Anatomy.
Joseph B. Workman, M.D., Baltimore Rh Typing Laboratory Fellow in Medicine.[1]

RESEARCH ASSISTANTS

Maryanne E. Berger, Research Assistant in Anatomy.[1o]
Elizabeth M. S. Boyle, A.B., Research Assistant in Biological Chemistry.[1c]
Catherine S. Brunst, A.B., Research Assistant in Anatomy.
Joseph R. Merkel, M.S., Research Assistant in Bacteriology[1]
John S. Metcalf, Jr., Research Assistant in Physiology.[1s]
Jean D. Nimmo, A.B., Research Assistant in Biological Chemistry.[1k]
Jeannette F. Rayner, Research Assistant in Psychiatry.[1r]
Carolyn M. Stout, M.S., Research Assistant in Physiology.[1j]

EXTRAMURAL ASSISTANT RESIDENTS IN MEDICINE

John F. Benson, M.D., Assistant Resident in Medicine.
Robert H. Hahn, M.D., Rotating Assistant Resident in Medicine.[1]
Howard E. Hall, M.D., Assistant Resident in Medicine.
John A. Hightower, M.D., Rotating Assistant Resident in Medicine.[1]
William Roemmich, M.D., Assistant Resident in Medicine.
Sidney J. Venable, M.D., Assistant Resident in Medicine.

[1n] Appointment effective January 1, 1951 to June 30, 1951.
[1o] Appointment effective March 1 to May 31, 1950.
[1p] Appointment effective January 1 to June 30, 1950.
[1q] Appointment effective October 1, 1949 to July 31, 1950.
[1r] Appointment effective February 1, 1950
[1s] Appointment effective September 1, 1950 to August 31, 1951.

UNIVERSITY HOSPITAL

George H. Buck, *Director*
James L. Dack, *Asst. Director*

EXECUTIVE COMMITTEE OF THE STAFF

John E. Savage, *Chairman*
Francis G. Dickey, *Secretary*

J. Edmund Bradley
T. Nelson Carey
Louis H. Douglass
Charles Reid Edwards
Jacob E. Finesinger
J. Mason Hundley, Jr.
Walter L. Kilby
F. Edwin Knowles, Jr.
Alfred T. Nelson
Maurice C. Pincoffs
Milton S. Sacks
George H. Yeager

Elected Members	*Term Expires*
Samuel T. R. Revell, Jr.	1950
Henry F. Ullrich	1950
A. H. Finkelstein	1951
Ephraim T. Lisansky	1951
James G. Arnold, Jr.	1952
Ernest I. Cornbrooks, Jr.	1952

George H. Buck, *Director, University Hospital* } *Ex officio members*
H. Boyd Wylie, *Dean, School of Medicine* }

UNIVERSITY HOSPITAL STAFF

Physician-in-Chief	Maurice C. Pincoffs
Physicians	Thomas P. Sprunt T. Nelson Carey Louis A. M. Krause William S. Love, Jr. Howard M. Bubert Milton S. Sacks Lewis P. Gundry Samuel Morrison Thedore E. Woodward Frank J. Geraghty Edward F. Cotter C. Edward Leach Ephraim T. Lisansky Samuel T. R. Revell, Jr.
Neurologists	Irving J. Spear Leon Freedom William Fearing Edward F. Cotter George Merrill
Dermatologist-in-Chief	Harry M. Robinson, Sr.
Dermatologists	Francis A. Ellis Harry M. Robinson, Jr.
Psychiatrist-in-Chief	Jacob E. Finesinger

UNIVERSITY HOSPITAL STAFF—*Cont'd.*

Psychiatrist	H. Whitman Newell
Pediatrician-in-Chief	J. Edmund Bradley
Pediatricians	C. Loring Joslin Gordon E. Gibbs A. H. Finkelstein William M. Seabold
Pathologist-in-Chief	Hugh R. Spencer
Pathologists	Dexter L. Reinmann John A. Wagner
Surgeon-in-Chief	Charles Reid Edwards
Surgeons	George H. Yeager Otto C. Brantigan Charles A. Reifschneider Harry C. Hull
Neurological Surgeon-in-Chief	Charles Bagley, Jr.
Neurological Surgeons	Richard G. Coblentz James G. Arnold, Jr.
Laryngologist-in-Chief	Edward A. Looper
Laryngologists	Thomas R. O'Rourk Frederick T. Kyper
Proctolologist-in-Chief	Monte Edwards
Proctologist	Thurston R. Adams
Orthopedic Surgeon-in-Chief	Allen F. Voshell
Orthopedic Surgeons	Moses Gellman Henry F. Ullrich Milton J. Wilder James P. Miller
Genito-Urinary Surgeon-in-Chief	W. Houston Toulson
Genito-Urinary Surgeons	Lyle J. Millan Howard B. Mays
Dental Surgeon-in-Chief	Brice M. Dorsey
Dentists	Myron S. Aisenberg Joseph C. Biddix Harold Golton Joseph P. Cappuccio Edward C. Dobbs Grayson W. Gaver Hugh T. Hicks Conrad L. Inman Ernest B. Nuttall Kenneth V. Randolph Wilbur O. Ramsey Lewis C. Toomey
Roentgenologist-in-Chief	Walter L. Kilby
Roentgenologists	Charles N. Davidson Donald J. Barnett

UNIVERSITY HOSPITAL STAFF—*Cont'd.*

Bronchoscopist-in-Chief	Edward A. Looper
Bronchoscopists	Frederick T. Kyper John H. Hirschfeld Richard J. Cross
Otologist-in-Chief	Thomas R. O'Rourk
Anesthesiologist-in-Chief	Alfred T. Nelson
Anesthesiologist	Frank J. Brady
Obstetricians-in-Chief	Louis H. Douglass D. Frank Kaltreider
Obstetricians	J. Morris Reese Isadore A. Siegel John E. Savage Hugh B. McNally
Ophthalmologist-in-Chief	F. Edwin Knowles, Jr.
Ophthalmologist	Paul N. Friedman
Gynecologist-in-Chief	J. Mason Hundley, Jr.
Gynecologists	Leo Brady Beverley C. Compton John C. Dumler William K. Diehl Everett S. Diggs Ernest I. Cornbrooks, Jr.
Oncologist-in-Chief	J. Mason Hundley, Jr.
Oncologist	Grant E. Ward
Physical Therapist	Grace E. Shaw

UNIVERSITY HOSPITAL RESIDENT AND INTERN STAFF

July 1, 1950 to June 30, 1951

Joseph H. Allen, Jr., M.D., *Assistant Resident in Surgery*

José A. Alvarez, B.S., M.D., *Assistant Resident in Neurosurgery, Assigned to Baltimore City Hospitals*

Claude F. Bailey, A.B., M.D., *Assistant Resident in Obstetrics*

Joseph W. Baggett, A.B., M.D., *Co-Resident in Gynecology*

Thomas G. Barnes, A.B., M.D., *Assistant Resident in Surgery*

Van B. Bennett, A.B., M.D., *Assistant Resident in Medicine*

James M. Bisanar, M.D., *Assistant Resident in Pediatrics*

Frank E. Brumback, M.D., *Assistant Resident in Surgery*

Robert E. Cato, A.B., M.D., *Resident in Roentgenology*[1b]

Jerome E. Cohn, A.B., M.D., *Assistant Resident in Medicine*

William C. Covey, Jr., M.D., *Resident in Obstetrics*

Robert M. N. Crosby, M.D., *Resident in Neurosurgery, Exchange Res., Baltimore City Hospitals*

James F. Dougherty, Jr., M.D., *Assistant Resident in Roentgenology*

William Carl Ebeling, III, B.S., M.D., *Resident in Medicine*

[1b] Until October 31, 1950. Fellow beginning November 1.

John E. Evans, B.S., M.D., *Assistant Resident in Surgery*
J. Earle Furman, B.S., M.D., *Assistant Resident in Pediatrics*
Joseph C. Furnari, B.S., M.D., *Assistant Resident in Medicine*[1c]
Joseph B. Ganey, A.B., M.D., *Assistant Resident in Surgery*
Richard A. Gilbert, M.D., *Assistant Resident in Gynecology*
Dorothy J. Gildea, B.A., M.D., *Intern in Pediatrics*
Benjamin M. Gold, B.S., M.D., *Assistant Resident in Gynecology*
Robert C. Hagan, B.S., M.D., *Assistant Resident in Medicine, Extern.*
John R. Hankins, B.A., M.D., *Assistant Resident in Surgery*
Frederick Heldrich, Jr., B.A., M.D., *Assistant Resident in Pediatrics*
Robert M. Hidey, Jr., M.D., *Assistant Resident in Pediatrics*
John F. Hogan, M.D., *Assistant Resident Genito-Urinary Surgery, Exchange Asst. Res. Baltimore City Hospitals*
Henry K. Jarrett, Jr., M.D., *Assistant Resident in Urology, Exchange Asst. Res. Baltimore City Hospitals*
Erwin R. Jennings, A.B., M.D., *Assistant Resident in Surgery*
Whedon Johnson, A.B., M.D., *Assistant Resident in Anesthesiology*
Douglas O. Kern, M.D., *Assistant Resident in Obstetrics*
Louis O. J. Manganiello, A.B., M.D., *Exchange Resident in Neurosurgery, Baltimore City Hospitals*
Fred R. McCrumb, Jr., M.D., *Assistant Resident in Medicine*
Eugene R. McNinch, M.D., *Resident in Roentgenology*
James R. McNinch, Jr., A.B., M.D., *Assistant Resident in Surgery*
Arlie R. Mansberger, M.D., *Assistant Resident in Surgery*
Gerald A. Martin, B.S., M.D., *Assistant Resident in Medicine, Extern.*
Thomas D. Michael, M.D., *Assistant Resident in Otolaryngology*
James V. Minor, Jr., B.A., M.D., *Resident in Pediatrics*
Wallace H. Mitchell, B.S., M.D., *Assistant Resident in Obstetrics*
Pomeroy Nichols, M.D., *Assistant Resident in Neurosurgery*[1d]
William A. Niermann, M.D., *Assistant Resident in Pediatrics*
John C. Ozazewski, M.D., *Resident in Ophthalmology*
S. Malone Parham, A.B., M.D., *Assistant Resident in Obstetrics, assigned to Gynecology*
Robert T. Parker, A.B., M.D., *Assistant Resident in Medicine*
Preston H. Peterson, M.D., *Assistant Resident in Obstetrics*
Nathaniel J. Pulver, M.D., *Assistant Resident in Pediatrics*
Benson C. Schwartz, M.D., *Assistant Resident in Obstetrics*
James H. Shell, B.S., M.D., *Co-Resident in Gynecology*
Edward P. Smith, Jr., B.S., M.D., *Assistant Resident in Surgery*
Kyle Y. Swisher, Jr., M.D., *Assistant Resident in Medicine*
John J. Tansey, M.D., *Assistant Resident in Orthopedics*
F. X. Paul Tinker, B.S., M.D., *Assistant Resident in Gynecology, Assigned to Obstetrics*
Roy B. Turner, M.D., *Assistant Resident in Neurosurgery*
Jose G. Valderas, M.D., *Intern in Gynecology*
Johnson Whedon, A.B., M.D., *Assistant Resident in Anaesthesiology*
John P. White, M.D., *Assistant Resident in Surgery*
David R. Will, M.D., *Resident in Surgery*
William S. Womack, B.S., M.D., *Assistant Resident in Obstetrics*

[1c] Until September 30, 1950.
[1d] Until December 31, 1950.

John L. Wooten, M.D., *Assistant Resident in Orthopedic Surgery Exchange Asst. Res., Baltimore City Hospitals*

Henry F. Zangara, B.S., M.D., *Assistant Resident in Roentgenology*[16]

Isidore Zerlin, B.S., M.D., *Assistant Resident in Anesthesiology*

SENIOR INTERNS

Robert A. Abraham, B.S., M.D.
Leonard Bachman, B.S., M.D.
Edward J. Broaddus, M.D.
Charles T. Henderson, M.D.
Arthur F. Hoge, Jr., B.S., M.D.
Edwin M. Hubbard, M.D.
Edmund B. Middleton, M.D.
Herbert K. Speers, M.D.
John W. Stover, M.D.
John F. Strahan, M.D.

JUNIOR INTERNS

Charles Bagley, B.S., M.D.
Wilbur N. Baumann, M.D.
Francis J. Borges, B.S., M.D.
Raymond Bradshaw, Jr., B.S., M.D.
Joseph B. Bronushas, B.S., M.D.
Elinor W. Demarest, B.A., M.D.
Warren Glaser, A.B., M.D.
Irvin G. Hoyt, B.A., M.D.
Virginia Huffer, B.S., M.D.
John F. Kelly, M.D.
Edward T. O'Hara, B.S., M.D.
Raymond C. Spaulding, Jr., B.S., M.D.

DENTAL INTERNS

Arthur M. Bushey, D.D.S.
C. W. Rader, Jr., D.D.S.

UNIVERSITY HOSPITAL OUTPATIENT DEPARTMENT STAFF

Emma Winship, R. N., *Director*

Chief of Medical Clinic	———
Physicians	T. Nelson Carey Edward F. Cotter M. Paul Byerly William K. Waller Walter Karfgin Kurt Levy Joseph E. Muse, Jr. Morris Fine James R. Karns John B. DeHoff Charles H. Williams Jonas Cohen Stephen Van Lill, III Charles E. Shaw Joseph G. Bird Marvin Goldstein Donald Mintzer
Chief of Gastro-Enterology Clinic	Francis G. Dickey
Assistant Gastro-Enterologist	Z. Vance Hooper Albert J. Shochat

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[16] Until October 31, 1950; Resident, beginning November 1.

UNIVERSITY HOSPITAL OUTPATIENT DEPARTMENT—*cont'd.*

Chief of Neurology Clinic	Leon Freedom
Assistant Neurologists	William L. Fearing Harry A. Teitelbaum
Chief of Chest Clinic	Meyer W. Jacobson
Assistant, Diseases of the Lungs	Manuel Levin
Chief of Diabetic Clinic	Samuel T. R. Revell, Jr.
Assistants	Charles E. Shaw Joseph G. Bird
Chief of Cardiovascular Clinic	C. Edward Leach
Assistant Cardiologists	Wilfred H. Townshend Rollin C. Hudson Sidney Scherlis Stephen J. Van Lill, III Fred B. Agee, Jr. James J. Nolan
Chief of Allergy Clinic	Howard M. Bubert
Assistant Chiefs of Allergy Clinic	Irvin B. Kemick Jerome Sherman
Assistant Allergists	Edward S. Kallins Raymond M. Lauer
Allergy Clinic Technicians	Selma R. Goldsmith Shirley W. Correll
Chief of Endocrinology Clinic	Conrad B. Acton
Director of Dermatology and Syphilis Clinic	Harry M. Robinson, Sr.
Chief of Dermatology and Syphilis Clinic	Harry M. Robinson, Jr.
Dermatologists and Syphilologists	Francis A. Ellis Israel Zeligman A. Albert Shapiro R. C. V. Robinson Eugene S. Bereston
Assistant Dermatologists and Syphilologists	Benjamin Highstein Lucile Caldwell V. Harwood Link Morris M. Cohen Mark B. Hollander William R. Bundick
Director of Psychiatric Clinic	H. Whitman Newell
Assistant Psychiatrists	Hans W. Loewald Kathryn L. Schultz William Stark Gertrude Gross Sam Novey Isadore Tuerk Rudolph Marburg Ephraim Lisansky G. S. Ingalls

UNIVERSITY HOSPITAL OUTPATIENT DEPARTMENT—*Cont'd.*

Director, Pediatric Clinic	A. H. Finkelstein
Chief of Pediatric Clinic	Samuel S. Glick
Assistant Pediatricians	Louis V. Blum Arnold F. Lavenstein Thomas E. Weeks J. Carlton Wich Howard Goodman Melvin N. Borden Lester Caplan Ruth B. Baldwin
Director, Pediatric Cardiac Clinic	Sidney Scherlis
Assistant Director, Pediatric Cardiac Clinic	Gibson J. Wells
Director, Pediatric Seizure Clinic	Ruth B. Baldwin
Chief of Surgical Clinic	Robert C. Sheppard
Assistant Surgeons	Samuel E. Proctor William B. Settle Karl F. Mech James N. Cianos Richard M. Garrett
Chief of Plastic Surgery	Edward A. Kitlowski
Chief of Orthopedic Surgery Clinic	Allen Fiske Voshell
Assistant Orthopedic Surgeons	Moses Gellman Henry F. Ullrich Milton J. Wilder James P. Miller M. R. Ettenson Hoyt Kirkpatrick, Jr.
Chief of Genito-Urinary Clinic	W. Houston Toulson
Assistant Genito-Urinary Surgeons	John F. Hogan Lyle J. Millan Morris A. Fine Howard B. Mays
Chief of Otolaryngology Clinic	Benjamin S. Rich
Assistant Otolaryngologists	Samuel L. Fox Albert Steiner Richard J. Cross
Chief of Proctology Clinic	Monte Edwards
Assistant Proctologists	Thurston R. Adams Donald B. Hebb William J. Supik Raymond Cunningham
Chief of Gynecology Clinic	J. Mason Hundley, Jr.
Assistant Chief of Gynecology Clinic	Beverley C. Compton

UNIVERSITY HOSPITAL OUTPATIENT DEPARTMENT—*Cont'd.*

Assistant Gynecologists	John C. Dumler William K. Diehl Everett S. Diggs Ernest I. Cornbrooks, Jr. Kenneth B. Boyd W. Allen Deckert Helen I. Maginnis Charles B. Marek Theodore Kardash Louis C. Gareis
Female Cystoscopists	J. Mason Hundley, Jr. Beverley C. Compton William K. Diehl Ernest I. Cornbrooks, Jr. Everett S. Diggs
Chief of Dental Clinic	Brice M. Dorsey
Assistant Chief of Dental Clinic	Lewis C. Toomey
Assistant Dentists	Jose Medina Marshall I. Kader Algert P. Lazauskas Edmond G. Vanden Bosche
Chief of Obstetrical Clinic	J. Huff Morrison
Assistant Chief of Obstetrical Clinic	Margaret B. Ballard
Assistant Obstetricians	John E. Savage Kenneth B. Boyd W. Kenneth Mansfield Louis C. Gareis J. K. B. E. Seegar Charles H. Doeller, Jr. George H. Davis Theodore Kardash Harry McB. Beck William A. Dodd Irvin P. Klemkowski Clarence W. Martin
Chief of Oncology Clinic, Gynecological Division	J. Mason Hundley, Jr.
Assistants in Gynecological Division	Beverley C. Compton John C. Dumler William K. Diehl Ernest I. Cornbrooks, Jr. Everett S. Diggs
Chief of Oncology Clinic, Surgical Division	Grant E. Ward
Assistants in Surgical Division	Arthur G. Siwinski E. Eugene Covington J. Duer Moores Edwin H. Stewart, Jr. Louis E. Goodman

UNIVERSITY HOSPITAL OUTPATIENT DEPARTMENT—*Cont'd.*

Chief of Vascular Clinic	George H. Yeager
Assistant Chief of Vascular Clinic	Raymond Cunningham
Medical Consultant—Vascular Clinic	Lewis P. Gundry
Chief of Ophthalmology Clinic	F. Edwin Knowles, Jr.
Assistant Ophthalmologists	Paul N. Friedman Cleo D. Stiles Ruby A. Smith Frederick M. Reese D. J. McHenry J. E. Brumback, Jr. Richard J. Cross Thomas Manchester
Professor of Speech	Ray Ehrensberger, Ph.D.
Associate Professor of Speech, University of Maryland at College Park	Merle Ansberry, Ph.D.
Occupational Therapist	Miss Lora E. Dunetz
Physical Therapist	Miss Mary Mason
Director, Social Service	Miss Mary Fitzpatrick

DISPENSARY REPORT FOR YEAR BEGINNING JANUARY 1, 1949 AND ENDING DECEMBER 31, 1949

Departments	*New Cases*	*Old Cases*	*Total*
Allergy	175	4,900	5,075
Arthritis	13	24	37
Cardiology	163	1,815	1,978
Cystoscopy (gyn)	129	688	817
Cystoscopy (g.U.)	64	49	113
Dermatology	13,023	14,146	27,169
Diabetic	97	1,630	1,727
Ear, Nose and Throat	1,341	2,533	3,874
Endocrine	47	467	514
Eye	1,276	3,028	4,304
Gastro Intestinal	166	836	1,002
Genito Urinary	810	2,020	2,830
Gynecology	1,777	6,029	7,806
Hematology	25	501	526
Medical	2,590	6,393	8,983
Neurology	190	595	785
Neuro Surgery	224	521	745
Obstetrics	2,392	18,565	20,957
Occupational Therapy	101	1,039	1,140
Oncology	287	1,919	2,206
Oral Surgery	392	699	1,091
Orthopedic	1,410	4,352	5,762
Pediatrics	2,651	8,184	10,835
Pediatric Cardiology	2	40	42
Pediatric Chest	4	89	93

Departments	*New Cases*	*Old Cases*	*Total*
Pediatric Seizure	6	24	30
Physiotherapy	0	0	0
Plastic Surgery	35	26	61
Proctology	263	472	735
Psychiatry	462	478	940
Surgery	2,993	7,100	10,093
Tuberculosis	181	955	1,136
Vascular	165	895	1,060
Total	33,455	91,011	124,466

MEDICAL CARE CLINIC

UNIVERSITY HOSPITAL

Director........HENRY W. D. HOLLJES
Assistant Director........SUSAN R. PINCOFFS

The Medical Care Clinic of the University of Maryland is the result of a study by the Medical and Chirurgical Faculty of Maryland in cooperation with the State Planning Commission. The present Clinic, located on the third floor of the Dispensary Building, is the first of its kind in this country. Public assistance clients are referred to the Clinic by the Baltimore City Health Department and are scheduled for an initial physical examination by physicians affiliated with the University of Maryland. A family physician is chosen by the patient from a list available at the Clinic. Copies of the individual's medical history and examinations are sent to the physician selected, who then becomes responsible for the medical care of the patient.

The Medical Care Program is, in this way, an entirely new approach to the problem of the indigent patient. For the first time, he becomes the responsibility of a private physician. This places the practice of medicine to the indigent on a par with the practice of private medicine.

After the initial examination, the Clinic functions as a diagnostic center to serve the needs of the neighborhood practitioner. Consultants working in the Medical Care Clinic are available and at present represent Medicine, Surgery, Gynecology and Otolaryngology. Others will be added as required.

The Clinic functions between 8:30 and 4:30 daily. Registrations and referrals are conducted in the morning. Clinical examinations and consultations are held during the afternoon. Approximately eighty neighborhood physicians have agreed to work with the Medical Care Program. Twenty-five members of the Out-patient Department and University Hospital Staff will conduct examinations in the Clinic.

The Faculty Committee on Post Graduate Education has also undertaken plans to provide instruction to all affiliated physicians.

5,550 public assistance clients have been assigned to this Clinic.

MERCY HOSPITAL

BOARD OF GOVERNORS

Walter D. Wise, *Chairman*

Mother M. Bernadette
Sister M. Veronica
Sister M. Carmel
Sister M. Cornelia
Sister M. Hildegarde
Sister M. Damian
Sister M. Thomas
Sister M. Brendan
Henry F. Bongardt
H. Raymond Peters
Maurice C. Pincoffs
Waitman F. Zinn
Thomas K. Galvin
Edward P. Smith
Elliott H. Hutchins
S. Edwin Muller

ADVISORY BOARD OF MERCY HOSPITAL

Most Reverend Lawrence J. Sheehan
Henry C. Evans
Thomas B. Butler
H. C. Byrd
Charles C. Conlon
Clarence E. Elderkin
Richard A. Froehlinger
William L. Galvin
August B. Haneke
Samuel H. Hoffberger
James J. Lacy[5]
James W. McElroy
Allen W. Morton
S. Page Nelson
Thomas W. Pangborn
William F. Schmick

MERCY HOSPITAL STAFF

Surgeon-in-Chief	Walter D. Wise
Surgeons	Elliott H. Hutchins F. L. Jennings R. W. Locher Thomas R. Chambers D. J. Pessagno William F. Rienhoff Henry F. Bongardt
Neurological Surgeons	Charles Bagley, Jr. Richard B. Coblentz James D. Arnold, Jr. Frank J. Otenasek John W. Chambers Raymond K. Thompson
Associate Surgeons	I. O. Ridgely James W. Nelson Howard B. McElwain Simon H. Brager John A. O'Connor Charles W. Maxson I. Ridgeway Trimble Raymond F. Helfrich

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[5] Died July 1, 1950.

MERCY HOSPITAL STAFF—*Cont'd.*

Assistant Surgeons	Julius Goodman S. Demarco, Jr. T. J. Touhey William N. McFaul, Jr. Meyer H. Zuravin Howard L. Zupnik Daniel R. Robinson Joseph V. Jerardi Wm. C. Dunnigan Harold H. Burns William L. Garlick John F. Schaeffer F. Ford Loker Patrick C. Phelan, Jr. Michael L. DeVincentis
Plastic Surgeons	Edward A. Kitlowski Clarence P. Scarborouge
Ophthalmologist	F. Edwin Knowles, Jr.
Associate Ophthalmologist	Joseph V. Jeppi
Associate Ophthalmologists and Otologists	M. Raskin Joseph I. Kemler F. A. Pacienza
Consulting Rhinologists and Laryngologists	W. Raymond McKenzie George W. Mitchell
Rhinologist and Laryngologist	Waitman F. Zinn
Associate Rhinologists and Laryngologists	Fayne A. Kayser Benjamin S. Rich Theodore A. Schwartz Birkhead Macgowan Benjamin H. Isaacs
Assistant Rhinologist and Laryngologist	Joseph V. Jeppi
Bronchoscopist	Waitman F. Zinn
Associate Bronchoscopist	Fayne A. Kayser
Assistant Bronchoscopists	Theodore A. Schwartz Robert Z. Berry
Consulting Orthopaedic Surgeon	Albertus C. Cotton
Orthopaedic Surgeon	H. L. Rogers
Associate Orthopaedic Surgeon	Henry F. Ullrich
Assistant Orthopaedic Surgeons	I. H. Maseritz J. H. Gaskel Isaac Gutman Everett D. Jones
Proctologists	Simon P. Brager William J. Supic
Urologist	Kenneth D. Legge

MERCY HOSPITAL STAFF—*Cont'd.*

Associate Urologists	Leon K. Fargo
	Francis W. Gillis
	J. S. Haines
Dermatologists	Francis A. Ellis
	Eugene S. Bereston
	R. C. V. Robinson
	William R. Bundick
Dentist	J. D. Fusco
Consulting Dentist	Conrad L. Inman
Consulting Physician	Maurice C. Pincoffs
Physician-in-Chief	H. Raymond Peters
Physicians	Harvey G. Beck
	Thomas P. Sprunt
	George McLean
	J. Sheldon Eastland
	Louis A. M. Krause
	Thomas C. Wolff
	T. Nelson Carey
	Sol Smith
Associate Physicians	Hubert C. Knapp
	Bartus T. Baggott
	Wetherbee Fort
	Hugh J. Welch
	S. Edwin Muller
	Frederick J. Vollmer
	William H. Kammer
Assistant Physicians	S. A. Tumminello
	J. Howard Burns
	Earl L. Chambers
	K. W. Golley
	John R. Davis, Jr.
	J. Emmett Queen
	John C. Osborne
	Arthur Karfgin
	Henry J. Marriott
	James J. Nolan
	Maurice Feldman, Jr.
Associate Gastro-Enterologists	R. Frederick Leitz
	Theodore H. Morrison
	Maurice Feldman
Assistant Gastro-Enterologist	Philip D. Flynn
Pediatricians	Edgar B. Friedenwald
	Frederick B. Smith
Associate Pediatrician	G. Bowers Mansdorfer

MERCY HOSPITAL STAFF—*Cont'd.*

Assistant Pediatricians	Jerome Fineman O. Walter Spurrier Israel P. Meranski Edward L. Frey, Jr. Earl Weeks A. M. Bacon, Jr.
Associate Neurologists and Psychiatrists	Harry Goldsmith Philip F. Lerner George G. Merrill
Anesthesiologist	James Russo
Consulting Obstetrician	Edward P. Smith
Obstetrician-in-Chief	John J. Erwin
Obstetricians	Thomas K. Galvin Frank K. Morris Ernest S. Edlow Hugh B. McNally
Associate Obstetricians	William C. Duffy Charles H. Doeller, Jr.
Assistant Obstetricians	William A. Dodd Harry McB. Beck Joseph C. Sheehan Robert B. Tunney J. Howard Burns Harry F. Kane William J. Rysanek, Jr.
Gynecologist-in-Chief	Thomas K. Galvin
Gynecologists	Edward P. Smith John J. Erwin Frank K. Morris
Associate Gynecologists	George A. Strauss, Jr. Ernest S. Edlow Charles H. Doeller, Jr. William A. Dodd Harry McB. Beck
Assistant Gynecologists	William C. Duffy Gerald A. Galvin Joseph C. Sheehan Robert B. Tunney Harry F. Kane William J. Rysanek, Jr.
Pathologists	Walter C. Merkel Hugh R. Spencer
Clinical Pathologist	H. T. Collenberg
Clinical Hematologist	H. Raymond Peters

MERCY HOSPITAL STAFF—*Cont'd.*

Clinical Biochemist	Charles E. Brambel
Technicians	Sister Paula Marie Eleanor Behr Elizabeth Johnson Carmela E. Minnick Constance Chapman Rita Berry Jeanne Merritt Florese Samorodin
Consulting Radiologist	Albertus Cotton
Radiologist	Edward R. Dana
Technicians (X-ray)	Mary Gorman Henrietta McCaffrey Frances Muth

MERCY HOSPITAL RESIDENT AND INTERN STAFF

JULY 1, 1950—JUNE 30, 1951

RESIDENT STAFF

Elden H. Pertz, B.S., M.D., *Resident Surgeon*
Karl A. Dillinger, M.D., *Associate Resident Surgeon*
August Kiel, Jr., M.D., *Assistant Resident Surgeon (Assigned to Neuro-Surgery)*
Rennert M. Smelser, M.D., *Senior Assistant Resident Surgeon*
Clyde D. Thomas, Jr., M.D., *Senior Assistant Resident Surgeon*
Margaret L. Sherrard, B.A., M.D., *Junior Assistant Resident Surgeon*
Frank J. Theuerkauf, Jr., M.D., *Junior Assistant Resident Surgeon*
Vincent dePaul Fitzpatrick, Jr., A.B., M.D., *Resident Gynecologist*
John A. Ferris, B.S., M.D., *Resident Obstetrician*
William D. Gentry, M.D., *Assistant Resident Gynecologist and Obstetrician*
Arthur R. Fleming, B.S., M.D., *Assistant Resident Gynecologist and Obstetrician*
Melchior F. R. Savarese, Jr., B.S., M.D., *Assistant Resident Gynecologist and Obstetrician*
Thomas P. Connor, A.B., M.D., *Resident Physician*
Allyn F. Judd, A.B., M.D., *Assistant Resident Physician*
Richard C. Fravel, M.D., *Assistant Resident Physician*
Howard F. Raskin, B.A., M.D., *Assistant Resident Physician*
John A. Spittel, Jr., B.S., M.D., *Assistant Resident Physician*
Richard A. Young, A.B., M.D., *Resident Pediatrician*
Mary E. Matthews, B.S., M.S., M.D., *Assistant Resident Pediatrician*

INTERNS

Mary Mediary Barstow, A.B., M.D.
Leonard G. Hamberry, A.B., M.D.
Philip W. Heuman, B.S., M.D.
Charles Ireland, M.D.
Frank T. Kasik, Jr., B.S., M.D.
Frank G. Kuehn, A.B., M.D.
William B. Rever, Jr., M.D.
Paul F. Richardson, M.D.
Oliver R. Roth, B.S., M.D.
Fowler F. White, B.S., M.D.

MERCY HOSPITAL DISPENSARY STAFF

Dispensary Director	Sister M. Anita
Supervisor of Surgical Clinic	Harold H. Burns
Dispensary Surgeons	I. Ridgeway Trimble Simon H. Brager Howard L. Zupnik Daniel R. Robinson Joseph V. Jerardi William C. Dunnigan William L. Garlick John F. Schaeffer F. Ford Loker Patrick C. Phelan Arthur G. Siwinski Melvin F. Polek Clarence P. Scarborough Michael L. DeVincentis Paul R. Ziegler
Supervisor of Genito-Urinary Clinic	Kenneth D. Legge
Assistant Genito-Urinary Surgeons	L. K. Fargo Francis W. Gillis John S. Haines
Supervisor of Orthopaedic Clinic	Harry L. Rogers
Orthopaedic Surgeons	Henry F. Ullrich Isaac Gutman I. H. Maseritz Jason H. Gaskel Everett D. Jones
Supervisor of Medical Clinic	H. Raymond Peters
Chiefs of Medical Clinic	Sol Smith S. Edwin Muller
Assistant Physicians	Frederick J. Vollmer William H. Kammer John R. Davis J. Emmett Queen Charles F. O'Donnell Arthur Karfgin John C. Osborne Maurice Feldman, Jr. James J. Nolan Milton C. Linthicum C. E. Gonzales
Chief of Allergy Clinic	S. Edwin Muller
Chief of Cardiovascular Clinic	Thomas C. Wolff
Assistant Cardiologists	Leon Ashman Henry J. Marriott
Chief of Metabolism Clinic	J. Sheldon Eastland

MERCY HOSPITAL DISPENSARY STAFF—*Cont'd.*

Assistant in Metabolism Clinic	J. E. Queen
Gastro-Enterologist	Maurice Feldman
Assistant Gastro-Enterologist	Philip Flynn
Chiefs of Pediatric Clinic	Edgar B. Friedenwald Fred B. Smith
Pediatricians	Jerome Fineman Israel T. Meranski O. Walter Spurrier Edward L. Frey, Sr. J. Carlson Wich Donald Cooper Earl Weeks Joseph Cordi
Neurologists and Psychiatrists	Philip F. Lerner George G. Merrill
Supervisor of Dermatology Clinic	Francis A. Ellis
Dermatologists	Eugene S. Bereston R. C. V. Robinson William R. Bundick
Oncologist	James W. Nelson
Chief of Gynecology Clinic	Thomas K. Galvin
Gynecologists	Edward P. Smith J. J. Erwin Frank K. Morris Ernest S. Edlow Charles H. Doeller, Jr. William A. Dodd Harry McB. Beck William C. Duffy Joseph C. Sheehan Harry F. Kane Robert B. Tunney Gerald A. Galvin John M. Palese
Chief of Obstetrical Clinic	John J. Erwin
Obstetricians	Harry F. Kane Charles H. Doeller, Jr. William A. Dodd Harry McB. Beck William C. Duffy Joseph C. Sheehan Robert B. Tunney William J. Rysanek, Jr.
Esophagoscopist	Waitman F. Zinn
Associate Esophagoscopist	Fayne A. Kayser

MERCY HOSPITAL DISPENSARY STAFF—*Cont'd.*

Rhinologists and Laryngologists	Waitman F. Zinn Theodore A. Schwartz Benjamin H. Isaacs Arthur Ward Robert Z. Berry
Ophthalmologists and Otologists	M. Raskin F. A. Pacienza Joseph V. Jeppi
Proctologist	Simon H. Brager
Assistant Proctologist	William T. Supik
Supervisors of Dental Clinic	J. D. Fusco Edward R. Stinebert
Consulting Dentist	Conrad L. Inman
Supervisor of Physiotherapy Clinic	Leon Hannan
Assistant Physiotherapist	Alice R. Hannan
Social Workers	Sister M. Scholastica[6] Anna Shawbaker Marian L. Kinney
Secretaries	Eva Applegarth Virginia Freeze

MEDICAL CARE CLINIC

Director	S. Edwin Muller
Assistant Director	Frances V. Loughney

The Medical Care Clinic at Mercy Hospital is one of six special clinics established and conducted for the Baltimore City Health Department. These clinics were established by the Medical and Chirurgical Faculty of Maryland and the State Planning Commission. The program takes up an unmet need for the indigent.

The City Welfare Department certifies recipients of public assistance to the Health Department. The Health Department in turn, assigns recipients to one of the medical care clinics operated by local hospitals, namely—Johns Hopkins, Sinai, University of Maryland, Mercy, Provident and South Baltimore. The clinic assignments are made primarily on a geographic basis.

During the current year the Mercy Medical Care Clinic is providing facilities for three thousand clients. It provides the eligible individual an initial physical examination, chest X-ray, bacteriological and other laboratory tests as indicated. Arrangements are also made by the Clinic to have each client register with a family physician of his or her choice selected from those Baltimore physicians who have agreed to participate in the program. The Clinic notifies the physician chosen, and sends him a complete written report of the physical findings.

The plan gives physicians an opportunity for contacts with the personnel and diagnostic facilities of the participating hospitals. At the request of the client's physician, consultation services of the Mercy Staff are made available. These services include Medicine, Surgery, Gynecology, Urology, Orthopedics, Dermatology, Neurology and other specialties, together with clinical laboratory facilities.

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[6] On Leave.

The Mercy Clinic is located on the 4th floor of the College Building. It includes a reception area, offices and examining rooms. An active personnel of Doctors, Nurses, Medical Technician and Medical Secretary are on duty from 9 A.M. to 5 P.M.

MERCY HOSPITAL DISPENSARY REPORT

JANUARY 1, 1949 TO JANUARY 1, 1950

Department	*New Cases*	*Old Cases*	*Total*
Allergy	21	149	170
Bronchoscopic	328	634	962
Cardiology	29	191	220
Dental	101	50	151
Dermatology	281	707	988
Diabetic	23	425	448
Gastro-Intestinal	40	143	183
Genito-Urinary	75	186	261
Gynecology	356	823	1,179
Medicine	521	2,677	3,198
Neurology	72	404	476
Neuro-Surgery	21	11	32
Ophthalmology	352	317	669
Orthopaedics	162	390	552
Pediatrics	387	1,129	1,516
Physiotherapy	173	1,742	1,915
Postnatal	227	1	228
Prenatal	352	2,874	3,226
Proctology	43	91	134
Rhinolaryngology	607	878	1,485
Surgery	970	2,831	3,801
Surgical Follow-Up	150	320	470
Well Clinic	92	156	248
Total	5383	17,129	22,512

THE BALTIMORE CITY HOSPITALS

STAFF, 1950–1951

Parker J. McMillin, *Superintendent*

Surgeon-in-Chief	Otto C. Brantigan, M.D.
Physician-in-Chief, Acting	C. Holmes Boyd, M.D.
Physician-in-Chief, Radiology	John DeCarlo, Jr., M.D.
Physician-in-Chief, Tuberculosis	H. Vernon Langeluttig, M.D.
Obstetrician-in-Chief	Louis H. Douglass, M.D.
Pediatrician-in-Chief	Harold E. Harrison, M.D.
Pathologist-in-Chief	C. Gardner Warner, M.D.
Dental Surgeon-in-Chief, Acting	H. Glenn Waring, D.D.S.
Consultant in Psychiatry	Esther L. Richards, M.D.
Consultant in Peripheral Vascular Diseases	George H. Yeager, M.D.

BALTIMORE CITY HOSPITAL STAFF—*Cont'd.*

Visiting Thoracic Surgeon	William L. Garlick, M.D.
Visiting Surgeons	James C. Owings, M.D. I. Ridgeway Trimble, M.D. Amos Koontz, M.D. Thurston R. Adams, M.D. Harry C. Bowie, M.D.
Consultant in Traumatic Surgery	C. A. Reifschneider, M.D.
Visiting Hand Surgeon	Raymond M. Curtis, M.D.
Assistant Visiting Surgeon	Donald B. Hebb, M.D.
Visiting Neuro-Surgeons	Charles Bagley, M.D. Richard G. Coblentz, M.D. James G. Arnold, M.D.
Assistant Visiting Neuro-Surgeon	R. K. Thompson, M.D.
Consultant in Plastic Surgery	Edward A. Kitlowski, M.D.
Visiting Plastic Surgeon	Clarence P. Scarborough, M.D.
Visiting Proctologist	Monte Edwards, M.D.
Visiting Urologists	W. Houston Toulson, M.D. Hugh Jewitt, M.D. Howard B. Mays, M.D.
Consulting Gynecologist	J. Mason Hundley, Jr., M.D.
Visiting Gynecologist	Beverly Compton, M.D.
Assistant Visiting Gynecologists	Ernest I. Cornbrooks, M.D. William K. Diehl, M.D. Everett S. Diggs, M.D.
Visiting Orthopedic Surgeons	Allen F. Voshell, M.D. Milton J. Wilder, M.D.
Assistant Visiting Orthopedic Surgeons	Isaac A. Gutman, M.D. Everett D. Jones, M.D.
Visiting Laryngologists	John Bordley, M.D. Fred T. Kyper, M.D.
Assistant Visiting Laryngologists	John H. Hirschfeld, M.D. Alfred T. Lieberman, M.D.
Visiting Ophthalmologist	Charles E. Iliff, Jr., M.D.
Visiting Oncologists	Grant E. Ward, M.D. Arthur G. Siwinski, M.D.
Visiting Anesthesiologists	Alfred T. Nelson, M.D. Theodore Stacy, M.D. Leonard Abramovitz, M.D.
Visiting Neuropathologist	John A. Wagner, M.D.
Assistant Chief Physician	Howard K. Rathbun, M.D.
Visiting Physicians	Louis A. M. Krause, M.D. William G. Speed, III, M.D. Crawford N. Kirkpatrick, M.D.
Assistant Visiting Physicians	James R. McShane, M.D. George G. Schlesinger, M.D.

BALTIMORE CITY HOSPITAL STAFF—*Cont'd.*

Assistant Visiting Physicians (USPHS)	John H. Miller, M.D. Leroy E. Duncan, Jr., M.D. Milton Landowne, M.D.
Physiologist (USPHS)	Nathan W. Shock, PH.D.
Visiting Neurologist	J. W. Magladery, M.D.
Assistant Visiting Neurologist	David B. Clark, M.D.
Visiting Dermatologist, Acting	Raymond C. V. Robinson, M.D.
Visiting Laboratory Physician	Julius Waghelstein, M.D.
Visiting Pediatricians	Hans Bix, M.D. Milton Markowitz, M.D.
Assistant Physician-in-Chief, Tuberculosis	Edmund G. Beacham, M.D.
Visiting Physicians, Tuberculosis	John H. Hirschfeld, M.D. Alvin S. Hartz, M.D.
Visiting Obstetrician	J. Morris Reese, M.D.
Assistant Visiting Obstetricians	D. Frank Kaltreider, M.D. John E. Savage, M.D. J. William Dorman, M.D. W. Newton Long, Jr., M.D. George W. Anderson, M.D. Louis C. Gareis, M.D.
Orthodontist	R. Kent Tongue, D.D.S.
Assistant Visiting Dental Surgeons	L. W. Bimestefer, D.D.S. Michael Varipatis, D.D.S. B. W. Miksinski, D.D.S.

THE JAMES LAWRENCE KERNAN HOSPITAL AND INDUSTRIAL SCHOOL OF MARYLAND FOR CRIPPLED CHILDREN

STAFF, 1950–1951

Surgeon-in-Chief and Medical Director	Allen Fiske Voshell, A.B., M.D.
Consultant in Orthopaedic Surgery and Roentgenology	Albertus Cotton, A.M., M.D.
Associate Orthopaedic Surgeons	Moses Gellman, B.S., M.D. Harry F. Ullrich, M.D. Henry F. Ullrich, M.D. Winthrop M. Phelps, A.B., M.D. Milton J. Wilder, M.D. David L. Filtzer, M.D. James P. Miller, M.D.
Roentgenologist	Charles N. Davidson, M.D.
Plastic Surgeon	Edward A. Kitlowski, A.B., M.D.
Aurist and Laryngologist	Benjamin S. Rich, A.B., M.D.
Dentist	M. E. Coberth, D.D.S.
Cardiologist	Helen M. Taussig, M.D.
Pediatrists	Melchijah Spragins, M.D.

KERNAN HOSPITAL STAFF—*Cont'd.*

Consulting Surgeon	Charles Reid Edwards, A.B., M.D.
Consulting Aurists and Laryngologists	Franklin B. Anderson, M.D. Edward A. Looper, M.D., D.Oph.
Consulting Neurological Surgeon	Charles Bagley, Jr., M.A., M.D.
Consulting Dermatologists	Harry M. Robinson, Sr., M.D. Leon Ginsburg, M.D.
Consulting Neurologists	Irving J. Spear, M.D. R. V. Seliger, M.D.
Consulting Pediatrists	Benjamin Tappan, A.B., M.D. J. Edmund Bradley, M.D.
Consulting Dentist	Harry B. McCarthy, D.D.S.
Consulting Pathologist	Hugh R. Spencer, M.D.
Consulting Roentgenologist	Henry J. Walton, M.D.
Resident Orthopaedic Surgeons	Michael R. Ettinson, M.D. Hoyt Kirkpatrick, Jr., M.D.
Superintendent	Miss Maud M. Gardner, R.N.
Dispensary and Social Service Nurse	Mrs. Evelyn Byrd Zapf, R.N.
Physical Therapists and X-ray Technicians	Mr. Henry Ewertz Mrs. Anna H. Erlanger Mrs. Georgiana Wisong
Occupational Therapist	Mrs. Catherine Shaw, O.T.
Instructor in Grammar School	Miss Bertha Sendelback

HISTORY OF THE SCHOOL OF MEDICINE

The present School of Medicine, with the title University of Maryland School of Medicine and College of Physicians and Surgeons, is the result of a consolidation and merger of the University of Maryland School of Medicine with the Baltimore Medical College (1913) and the College of Physicians and Surgeons of Baltimore (1915).

Through the merger with the Baltimore Medical College, an institution of thirty-two years' growth, the facilities of the School of Medicine were enlarged in faculty, equipment and hospital connection.

The College of Physicians and Surgeons was incorporated in 1872, and established on Hanover Street in a building afterward known as the *Maternité*, the first obstetrical hospital in Maryland. In 1878 union was effected with the Washington University School of Medicine, in existence since 1827, and the college was removed to Calvert and Saratoga Streets. Through the consolidation with the College of Physicians and Surgeons, medical control of the teaching beds in the Mercy Hospital was obtained.

The School of Medicine of the University of Maryland is one of the oldest foundations for medical education in America, ranking fifth in point of age among the medical colleges of the United States. It was organized in 1807 and chartered in 1808 under the name of the College of Medicine of Maryland, and its first class was graduated in 1810. In 1812 the College was empowered by the Legislature to annex three other colleges or faculties: Divinity, Law, and Arts and

Sciences; and the four colleges thus united were "constituted an University by the name and under the title of the University of Maryland."

The original building of the Medical School at the N. E. corner of Lombard and Greene Streets was erected in 1812. It is the oldest structure in this country from which the degree of doctor of medicine has been granted annually since its erection. In this building were founded one of the first medical libraries and one of the first medical school libraries in the United States.

At this Medical School dissection was made a compulsory part of the curriculum, and independent chairs for the teaching of gynecology and pediatrics (1867), and of ophthalmology and otology (1873), were installed for the first time in America.

This School of Medicine was one of the first to provide for adequate clinical instruction by the erection of its own hospital in 1823. In this hospital intramural residency for senior students was established for the first time.

The School of Medicine has been co-educational since 1918.

BUILDINGS AND FACILITIES

The original medical building at the N. E. corner of Lombard and Greene Streets houses the office of the Dean, Room 101, the office of the Committee on Admissions, Room 102, two lecture halls, the faculty room and office of the assistant business manager.

The Administration Building, to the east of the original building, contains the Baltimore offices of the Registrar and two lecture halls.

The laboratory building at 31 South Greene Street is occupied by the departments of Pathology, Bacteriology and Biochemistry.

The Frank C. Bressler Research Laboratory provides the departments of Anatomy, Histology and Embryology, Pharmacology, Physiology and Clinical Pathology with facilities for teaching and research. It also houses the research laboratories of the clinical departments, animal quarters, a laboratory for teaching Operative Surgery, a lecture hall and the Bressler Memorial Room.

This building was erected in 1939–1940 at 29 South Greene Street opposite the University Hospital. It was built with funds left to the School of Medicine by the late Frank C. Bressler, an alumnus, supplemented by a grant from the Federal government. The structure, in the shape of an I, extends east from Greene Street, just north of the original building.

MEDICAL LIBRARY

Howard Rovelstad, A.B., M.A., B.S.L.S.	*Acting Director of Libraries*

Ida Marian Robinson, A.B., B.S.L.S.	*Librarian*
Hilda E. Moore, A.B., A.B.L.S.	*Assistant Librarian*
Florence R. Kirk	*Assistant Librarian*
Marie Harvin, B.A., B.S.L.S.	*Cataloguer*
Charlotte Wilson	*Assistant to the Cataloguer*
Joy S. Robbins	*Secretary to the Librarian*

The Medical Library of the University of Maryland, founded in 1813 by the purchase of the collection of Dr. John Crawford, now numbers 32,000 volumes and several thousand pamphlets and reprints. Over four hundred of the leading medical journals, both foreign and domestic, are received regularly. The library is housed in Davidge Hall, in close proximity to classrooms and laboratories, and is open daily for the use of members of the faculty, the student body and the profession generally. Libraries pertaining to particular phases of medicine are maintained by several departments of the medical school.

The library of the Medical and Chirurgical Faculty of Maryland and the Welch Medical Library are open to students of the medical school without charge. Other libraries of Baltimore are the Peabody Library and the Enoch Pratt Free Library.

DISPENSARY BUILDING

The old hospital building has been remodeled and is occupied by the Out-patient Department. Thus the students have been provided with a splendidly appointed group of clinics for their training in out-patient work. All departments of clinical training are represented in this remodeled building and all changes have been predicated on the teaching function for which this department is intended.

The office of the Medical School Physician is located in this building.

The Department of Art also occupies quarters here.

UNIVERSITY HOSPITAL

The University Hospital, which is the property of the University of Maryland, is the oldest institution for the care of the sick in the state of Maryland. It was opened in September 1823, under the name of the Baltimore Infirmary, and at that time consisted of but four wards, one of which was reserved for patients with diseases of the eye.

In 1933–1934 the new University Hospital was erected and patients were admitted to this building in November 1934. The new hospital is situated at the southwest corner of Redwood and Greene Streets, and is consequently opposite the medical school buildings. The students, therefore, are in close proximity and little time is lost in passing from the lecture halls and laboratories to the clinical facilities of the new building.

This new building, with its modern planning, makes a particularly attractive teaching hospital and is a very valuable addition to the clinical facilities of the medical school.

The new hospital has a capacity of 435 beds and 65 bassinets devoted to general medicine, surgery, obstetrics, pediatrics, and the various medical and surgical specialties.

The teaching zone extends from the second to the eighth floor and comprises wards for surgery, medicine, obstetrics, pediatrics, and a large clinical lecture hall. There are approximately 270 beds available for teaching.

The space of the whole north wing of the second floor is occupied by the department of roentgenology. The east wing houses clinical pathology and special laboratories for clinical microscopy, biochemistry, bacteriology, and an especially well appointed laboratory for students' training. The south wing provides space for electro-cardiographic and basal metabolism departments, with new and very attractive air-conditioned or oxygen therapy cubicles. The west wing contains the departments of rhinolaryngology and bronchoscopy, industrial surgery, and male and female cystoscopy.

The third and fourth floors each provide two medical and two surgical wards. The fifth floor contains two wards for pediatrics, and on the sixth floor there are two wards for obstetrics. Each ward occupies the space of one wing of the hospital.

On the seventh floor is the general operating suite, the delivery suite, and the central supply station. The eighth floor is essentially a students' floor and affords a mezzanine over the operating and delivery suites, and a students' entrance to the clinical lecture hall.

In the basement there is a very well appointed pathological department with a large teaching autopsy room and its adjunct service of instruction of students in pathological anatomy.

The hospital receives a large number of accident patients because of its proximity to the largest manufacturing and shipping districts of the city.

The obstetrical service is particularly well arranged and provides accommodation for forty ward patients. This service, combined with an extensive home service, assures the student abundant obstetrical training.

During the year ending December 31, 1949, 2552 cases were delivered in the hospital and 665 cases in the outdoor department. Students in the graduating class observed at least thirty-five cases, each student being required to deliver at least eight patients in their homes.

The dispensaries associated with the University Hospital and the Mercy Hospital are organized upon a uniform plan in order that the teaching may be the same in each. Each dispensary has the following departments: medicine, surgery, pediatrics, ophthalmology, otology, genito-urinary, gynecology, gastroenterology, neurology, orthopaedics, proctology, dermatology, laryngology, rhinology, cardiology, tuberculosis, psychiatry, oral surgery and oncology.

All students in their junior year work each day during one-third of the year in the departments of medicine and surgery of the dispensaries. In their senior year, all students work one hour each day in the special departments.

MERCY HOSPITAL

The Sisters of Mercy first assumed charge of the Hospital at the corner of Calvert and Saratoga Streets, then owned by the Washington University, in 1874. By the merger of 1878 the Hospital came under the control of the College of Physicians and Surgeons, but the Sisters continued their work of ministering to the patients.

In a very few years it became apparent that the City Hospital, as it was then called, was much too small to accommodate the rapidly growing demands upon it. However, it was not until 1888 that the Sisters of Mercy, with the assistance of the Faculty of the College of Physicians and Surgeons, were able to lay the cornerstone of the present hospital. This building was completed and occupied late in 1889. Since then the growing demands for more space have compelled the erection of additions, until now there are accommodations for 350 patients.

In 1909 the name was changed from The Baltimore City Hospital to Mercy Hospital.

The clinical material in the free wards is under the exclusive control of the

Faculty of the University of Maryland School of Medicine and College of Physicians and Surgeons.

THE BALTIMORE CITY HOSPITALS

The clinical facilities of the School of Medicine have been largely increased by the liberal decision of the Department of Public Welfare to allow the use of the wards of these hospitals for medical education. The autopsy material also is available for student instruction.

Members of the junior class make daily visits to these hospitals for clinical instruction in medicine, surgery, and the specialties.

The Baltimore City Hospitals consist of the following separate divisions:

The General Hospital, 400 beds, 90 bassinets.
The Hospital for Chronic Cases, 575 beds.
The Hospital for Tuberculosis, 280 beds.
Infirmary (Home for Aged) 700 beds.

THE JAMES LAWRENCE KERNAN HOSPITAL AND INDUSTRIAL SCHOOL OF MARYLAND FOR CRIPPLED CHILDREN

This institution is situated on an estate of 75 acres at Dickeyville. The site is within the northwestern city limits and of easy access to the city proper.

The location is ideal for the treatment of children, in that it affords all the advantages of sunshine and country air.

A hospital unit, complete in every respect, offers all modern facilities for the care of any orthopaedic condition in children.

The hospital is equipped with 80 beds—endowed, and city and state supported.

The orthopaedic dispensary at the University Hospital is maintained in closest affiliation and cares for the cases discharged from the Kernan Hospital. The physical therapy department is very well equipped with modern apparatus and trained personnel. Occupational therapy has been fully established and developed under trained technicians.

THE BALTIMORE EYE, EAR, AND THROAT HOSPITAL

This institution was first organized and operated in 1882 as an outgrowth of the Baltimore Eye and Ear Dispensary, which closed on June 14, 1882. The name then given to the new hospital was The Baltimore Eye and Ear Charity Hospital. It was located at the address now known as 625 W. Franklin St. The out-patient department was opened on September 18, 1882 and the hospital proper on November 1 of the same year. In 1898 a new building afforded 24 free beds and 8 private rooms; by 1907 the beds numbered 47; at present there are 60 beds, 29 of which are free. In 1922 the present hospital building at 1214 Eutaw Place was secured and in 1926 the dispensary was opened. In 1928 a clinical laboratory was installed. During 1949 the out-patient visits numbered 22,187.

Through the kindness of the Hospital Board and Staff, our junior students have access to the dispensary which they visit in small groups for instruction in ophthalmology.

REQUIREMENTS FOR ADMISSION

METHOD OF MAKING APPLICATION

Requests for application forms should be filed not earlier than September 15th preceding by one year the desired date of admission. These forms may be secured from the Committee on Admissions, School of Medicine, University of Maryland, Baltimore 1, Maryland.

APPLICATION FOR ADMISSION TO THE FIRST YEAR

Application for admission is made by filing the required form and by having all pertinent data sent directly to the Committee on Admissions, in accordance with the instructions accompanying the application.

Consideration will be given applications received after December 1st provided the class is not complete.

APPLICATION FOR ADMISSION TO ADVANCED STANDING

Students who have attended approved medical schools are eligible to file applications for admission to the second- and third-year classes only. These applicants must be prepared to meet the current first-year entrance requirements in addition to presenting acceptable medical school credentials, and a medical school record based on courses which are quantitatively and qualitatively equivalent to similar courses in this school.

Application to advanced standing is made in accordance with the instructions accompanying the application form.

Persons who already hold the degree of Doctor of Medicine will not be admitted to the Medical School as a candidate for that degree from this university.

MINIMUM REQUIREMENTS FOR ADMISSION

The minimum requirements for admission to the School of Medicine are:

(a) Graduation from an approved secondary school, or the equivalent in entrance examinations, and

(b) Three academic years of acceptable college credit, exclusive of physical education and military sciences, earned in colleges of arts and sciences which are currently approved by the Council on Medical Education and Hospitals of the American Medical Association. The quantity and quality of this course of study shall be equivalent to that required for recommendation by the institution where the college courses are being, or have been, pursued.

(c) The following courses and credits in basic required subjects must be completed by June of the year the applicant desires to be admitted:

	Semester hours	*Quarter hours*
General biology or zoology	8	12
Inorganic chemistry	8	12
Organic chemistry	6–8	9–12
General physics	8	12
English	6	9
Modern language (German, French, Spanish)	6	9

(d) The total semester-hour or quarter-hour credits presented must be equivalent in quantity and quality to three-fourths of the credit requirement for graduation by the recommending institution, exclusive of courses in physical education and military sciences.

Applicants who are unable to complete these requirements by June of the year admission is desired, will be considered contingent on places being available, provided all basic required courses and credits shall have been absolved by June as indicated in (c) above.

(e) Students who are conditioned in college courses are not accepted.

Elective courses should be selected from the following three groups. Highly desirable courses are shown in bold face type.

Humanities	*Natural Sciences*	*Social Sciences*
English (an advanced course in English composition should be taken, if possible)	**Vertebrate Embryology**	Economics
Scientific German or French (A reading knowledge of either language is desirable, although German is preferred)	Comparative Vertebrate Anatomy	History
Philosophy	**Quantitative Analysis**	Political Science
	Physical Chemistry	**Psychology** (a general course is desirable)
	Mathematics	Sociology, etc.

Careful attention should be given to the selection of elective courses in the natural sciences. It is suggested that the elective list given herewith be used as a guide. The remainder of college credits should be accumulated from courses designed to promote a broad cultural development. Thirty six hours or the equivalent in session hours or courses in the humanities are recommended. Students should avoid taking courses in college which are included in the medical curriculum, for example histology, human anatomy, bacteriology, physiology, neurology and physiological chemistry.

It is not intended that these suggestions be interpreted as restrictions upon the education of students who exhibit an aptitude for the natural sciences or as limitations upon the development of students who plan to follow research work in the field of medicine.

In accepting candidates for admission, preference will be given to those applicants who have acceptable scholastic records in secondary school and college, satisfactory scores in the Medical College Admission Test, given in May each year, favorable letters of recommendation from their premedical committees, or from one instructor in each of the departments of biology, chemistry, and physics, and who in other respects give promise of becoming successful students and physicians of high standing.

Those candidates for admission who are permanently accepted will receive a certificate of matriculation from the office of the Dean.

COMBINED COURSE IN ARTS AND SCIENCES AND MEDICINE

A combined seven years' curriculum leading to the degrees of Bachelor of Science and Doctor of Medicine is offered by the University of Maryland. The first three years are taken in residence in the College of Arts and Sciences at College Park, and the last four years in the School of Medicine in Baltimore. (See University catalogue for details of quantitative and qualitative college course requirements.)

If a candidate for the combined degree completes the work of the first year in the School of Medicine with an average of "C" without failures, and if he has absolved the quantitative and qualitative college requirements set up by the University, he is eligible to recommendation by the Dean of the School of Medicine that the degree of Bachelor of Science be conferred.

Because the general commencement usually takes place before the School of Medicine is prepared to release grades of the first-year class, this combined degree of Bachelor of Science is conferred at the commencement following the candidate's second year of residence in the School of Medicine.

STATE MEDICAL STUDENT QUALIFYING CERTIFICATES

Candidates for admission who live in or expect to practice medicine in Pennsylvania, New Jersey or New York, should apply to their respective state boards of education for medical student qualifying certificates (Pennsylvania and New Jersey) or approval of applications for medical student qualifying certificates (New York).

Those students who are accepted must file satisfactory State certificates in the office of the Committee on Admissions, School of Medicine, before registration. No exceptions will be made to this requirement.

Addresses of the State Certifying Offices

Director of Credentials Section, Pennsylvania Department of Public Instruction, Harrisburg, Pa.

Chief of the Bureau of Credentials, New Jersey Department of Public Instruction, Trenton, N. J.

Supervisor of Qualifying Certificates, The State Education Department, Examinations and Inspections Division, Albany, N. Y.

DEFINITION OF RESIDENCE STATUS OF STUDENTS*

Students who are minors are considered to be resident students if, at the time of their registration, the parents* have been residents of this State for at least one year.

Adult students are considered to be resident students if, at the time of their registration, they have been residents of this State for at least one year, provided such residence has not been acquired while attending any school or college in Maryland.

The status of the residence of a student is determined at the time of his first registration in the university and may not thereafter be changed by him unless, in the case of a minor, his parents* move to and become legal residents of this state by maintaining such residence for at least one full calendar year. However, the right of the student (minor) to change from a non-resident to a resident status must be established by him prior to registration for a semester in any academic year.

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* The term "parents" includes persons who have been legally constituted the guardians of or stand in loco parentis to such minor students.

CURRENT FEES

Matriculation fee (paid once)	$10.00
Tuition fee (each year)—Residents of Maryland	450.00
Tuition fee (each year)—Non-Residents	600.00
Laboratory fee (each year)	25.00
Student health service fee (each year)	20.00
Student activities and service fee (each year)	15.00
*Lodging and meals fee	6.75
Graduation fee	15.00
Re-examination fee (each subject)	5.00
Transcript fee to graduates. First copy gratis, each copy thereafter	1.00

RULES FOR PAYMENT OF FEES

No fees are returnable.

Make all checks or money orders payable to the "University of Maryland".

When offering checks or money orders in payment of tuition and other fees, students are requested to have them drawn in the exact amount of such fees. Personal checks whose face value is in excess of the fees due will be accepted for collection only.

Acceptance.—Payment of the matriculation fee of $10.00 and of a deposit on tuition of $50.00 is required of accepted applicants before the expiration date specified in the offer of acceptance. This $60.00 deposit is not returnable and will be forfeited if the applicant fails to register, or it will be applied to the applicant's first semester's charges on registration.

Registration.—All students, after proper certification, are required to register at the business office, Gray Laboratory. (See calendar page 5 of this bulletin for dates for the payments of fees, and the note regarding late registration fee.)

One-half of the tuition fee, the laboratory fee, the student health fee, the maintenance and service fee and the student activities fee are payable on the date specified for registration for the first semester.

The remainder of the tuition fee shall be paid on the date designated for the payment of fees for the second semester. Fourth year students shall pay the graduation fee, in addition, at this time.

PENALTY FOR NON-PAYMENT OF FEES

If semester fees are not paid in full on the specified registration dates, a penalty of $5.00 will be added.

If a satisfactory settlement, or an agreement for settlement, is not made with the business office within ten days after a payment is due, the student automatically is debarred from attendance on classes and will forfeit the other privileges of the School of Medicine.

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* Junior Students will be billed for this fee, covering lodging and meals while on obstetrical service at Baltimore City Hospitals. Section B. on Schedule 2 will be billed for the first semester; Section A on Schedule 2 for the second semester. This fee must be paid by all junior students whether or not they serve during the previous summer or the academic year.

REEXAMINATION FEE

A student who is eligible to reexaminations must pay the business office $5.00 for each subject in which he is to be examined, and he must present the receipt to the faculty member giving the examination before he will be permitted to take the examination.

STUDENT ACTIVITIES AND SERVICE FEE

This fee pays for the use of clothing lockers, provides library privileges, maintains student loan collections, a student lounge and cafeteria. It supports a recreational program for students of all classes, provides photographs for all school purposes, including state boards. It provides for and furnishes graduates with invitations and tickets to the Pre-commencement Exercises. It supports the activities of the Student Council.

STUDENT HEALTH SERVICE

JAMES R. KARNS, M.D. .... Director, Student Health Service.

The Medical School has made provision for the systematic care of students according to the following plan:

1. *Preliminary Examination*—All new students will be examined during the first week of the semester. Notice of the date, time, and place of the examination will be announced to the classes and on the bulletin board. The passing of this physical examination is necessary before final acceptance of any student.
2. *Medical Attention*—Students in need of medical attention will be seen by the school physician, Dr. James R. Karns, in his office at the medical school, at 9 A.M. daily, except Saturday and Sunday. In case of necessity, students will be seen at their homes.
3. *Hospitalization*—If it becomes necessary for any student to enter the hospital during the school year, the school has arranged for the payment of part or all of his hospital expenses, depending on the length of his stay and special expenses incurred. This applies only to students admitted through the school physician's office.
4. *Physical Defects*—Prospective students are advised to have any known physical defects corrected before entering school in order to prevent loss of time which later correction might incur.
5. *Eye Examination*—Each new matriculate is required to undergo an eye examination at the hands of an oculist (Doctor of Medicine) within three months before entering the School of Medicine. Long study hours bring out unsuspected eye defects which cause much loss of time and inefficiency in study if not corrected until after school work is under way.
6. *Limitations*—It is not the function of this service to treat chronic conditions contracted by students before admission, nor to extend treatment to acute conditions arising in the period between academic years, unless the school physician recommends this service.

GENERAL RULES

The right is reserved to make changes in the curriculum, the requirements for graduation, the fees and in any of the regulations whenever the university authorities deem it expedient. Students are urged, therefore, to read the latest issue of the catalogue and follow the rules set forth therein.

GRADING SYSTEM

Official grades are designated by these symbols:

Symbol	*Scholarship*	*Numerical Equivalent*
A	Superior	93–100
B	Good	87– 92
C	Fair	80– 86
D	Passing	75– 79
F	Failure	Below 75
I	Incomplete	—
WF	Withdrew, failing	—

The class standing of seniors only will be released. This standing will appear on senior grade reports sent out from the Registrar's office.

ADVANCEMENT AND GRADUATION

1. No medical student will be permitted to begin work for credit in any semester of any year who reports for classes later than one week after classes begin, except by permission of the Dean.

2. No student will be permitted to advance with unabsolved failures.

3. A general scholastic average of C is required for advancement to junior and senior standing and for graduation.

4. A student who in any one year has one failure together with grades of D in all other subjects, will be dropped from the rolls.

5. A student who has failures in two completed major subjects will be dropped from the rolls.

6. All students are required to attend 85% of scheduled classes and (excluding seniors) take spring examinations unless excused by the Dean.

7. Should a student be required to repeat any year in any course, he must pay regular fees.

8. A student failing his final examinations for graduation at the end of the fourth year will be required to repeat the entire course of the fourth year and take examinations in such other branches as may be required, provided he is permitted to enter the school as a candidate for graduation.

9. The general fitness of a candidate for graduation as well as the results of his examinations will be taken into consideration by the faculty.

EQUIPMENT

10. At the beginning of the first year, all students must be prepared to provide microscopes of a satisfactory type equipped with a mechanical stage and a substage lamp.

A standard microscope of either Bausch & Lomb, Leitz, Spencer, or Zeiss make, fitted with the following attachments, will meet the requirements:

16 mm., 10x, 0.25 N.A.—4.9 mm. working distance.
4 mm., 43x, 0.65 N.A.—0.6 mm. working distance.

1.8 mm., 97x, oil immersion, 1.25 N.A.—0.13 mm. working distance.
Oculars: 10x and 5x. Huygenian eyepieces.
Triple nose pieces with 16 mm., 4 mm., and 1.9 mm. 125 N.A. oil immersion lens.

Wide aperture stage with quick screw condenser and built on, but detachable, ungraduated mechanical stage. Substage condenser, variable focusing type 1.25 N.A. with iris diaphragm. A rack and pinion focusing device is preferred. Mirror plane on one side, concave on the other. A carrying case is recommended.

Students are cautioned with respect to the purchase of used microscopes since some older instruments were equipped with a 4 mm. (high dry) objective whose N.A. is marked as 0.85 N.A. This objective has such a short working distance (0.3 mm.) that it is difficult or impossible to focus through thick cover glasses or the standard haemocytometer cover glass without breakage. All used microscopes are subject to inspection and approval by the department.

11. Students in the second year class are required to provide stethoscopes.

12. Third- and fourth-year students are required to provide haemocytometers, opthalmoscopes and otoscopes.

STATE QUALIFYING CERTIFICATES

13. Candidates for admission who live in or expect to practice medicine in Pennsylvania, New Jersey or New York must file State qualifying certificates in the office of the Committee on Admissions, School of Medicine, before registration. No exception will be made to this rule.

EYE EXAMINATION BEFORE ADMISSION

14. Each new matriculate in each class is required to present to the Committee on Admissions a certificate from an oculist, (a graduate in medicine) that the matriculate's eyes have been examined and are in condition, with or without glasses as the case may be, to endure the strain of close and intensive reading.

It is required that this examination be completed within three months prior to registration and that the certificate be mailed to the Committee on Admissions not later than one month before registration.

AWARDING OF COMBINED DEGREES

15. Students entering the School of Medicine on a three-year requirement basis from colleges which usually grant a degree on the successful completion of the first year of medicine, are restricted by the following regulations:

a—The candidate must present a certificate from his college or university that he has absolved the quantitative and qualitative premedical requirements for this degree.

b—The candidate must acquire an average of "C" without failures for the work of his first year in the School of Medicine.

c—The Dean of the School of Medicine reserves the right to withhold his recommendation that a bachelor's degree be conferred at a commencement which occurs before the official release of first-year medical grades.

COST OF TRANSCRIPTS

16. Graduates will receive the first transcript of record without charge. Subsequent copies will cost one dollar each. Requests for transcripts must be filed

with the Registrar's Office, University of Maryland, Lombard and Greene Streets, Baltimore-1, Maryland.

HOUSING

There are no housing or living accommodations on the campus of the medical school.

PARKING

Because of lack of space on the university parking lots no parking facilities are provided thereon for students.

LIBRARY REGULATIONS

Loan Regulations

Loan periods have been worked out according to demand for and protection of different types of material.

Two-Week Loans: All books except those on reserve.

Three-Day Loans: All journals except the latest number (which does not circulate), and those on reserve.

Overnight Loans: Books and journals on reserve.
(4 p.m.–10 a.m.)

Special Rules or Books on Reserve:

Students whose names appear on the check-list for the Mercy Hospital section will be granted the necessary hours to return reserve books.

Overnight books may be reserved in advance only within the week in which they will be used. Books may be reserved on Saturday for the following Monday.

Overnight books may not be reserved two successive nights by the same person.

Advance reserves will be held until one hour before closing.

Fines

Fines are imposed not to acquire money, but to assure equal access to books.

Two-Week Loans: 5¢ per day.

Three-Day Loans: 5¢ per day.

Overnight Loans: 5¢ per hour.

Lost Books: List price of the book. (Lost books should be reported at once)

All books must be returned, lost books replaced or paid for, and fines paid before a student can finish the year in good standing.

In fairness to all concerned, these rules must be enforced without exception.

CERTIFICATION FOR STATE BOARD AND NATIONAL BOARD EXAMINATIONS

No student will be certified to State Board or National Board examiners who has unabsolved failures in subjects taken during the academic period covered by these examinations.

WITHDRAWALS AND REFUNDS

Formal Withdrawal Procedures

Students over 21 years of age desiring to leave the School of Medicine at any time during the academic year are required to file with the Dean a written application for withdrawal. In addition, the student must secure an "honorable dismissal release" form from the Dean's secretary, and return this to the Dean's office appropriately signed by representatives of the departments listed thereon, together with his "matriculation certificate."

If these procedures are not completed, the student will not be entitled to honorable dismissal nor to refund of fees.

Students under 21 years of age, must supplement the procedures previously described with the written consent of their parents or guardians.

Academic Standing On Withdrawal

Students who voluntarily withdraw during an academic semester will be given no credit.

Students are not permitted to resort to withdrawal in order to preclude current or impending failures. Their standing on withdrawal will be recorded in the registrar's office.

Students who withdraw from the School of Medicine, must apply to the Committee on Admissions for readmission, unless other arrangements have been consummated with the Dean's written consent.

Refunds on Withdrawal

Students who are eligible to honorable dismissal will receive a refund of current charges, after the matriculation fee has been deducted, according to the following schedule:

Period elapsed after instruction begins.	*Percentage refundable*
Two weeks or less	80%
Between two and three weeks	60%
Between three and four weeks	40%
Between four and five weeks	20%
After five weeks	0

PRIZES

THE FACULTY PRIZE

The faculty will award the gold medal and certificate and five certificates of honor to those six of the first ten highest ranking candidates for graduation who, during the four academic years, have exhibited outstanding qualifications for the practice of medicine.

THE DR. A. BRADLEY GAITHER MEMORIAL PRIZE

A prize of $25.00 is given each year by Mrs. A. Bradley Gaither as a memorial to the late Dr. A. Bradley Gaither, to the student in the senior class doing the best work in genito-urinary surgery.

THE WILLIAM D. WOLFE MEMORIAL PRIZE

(Value $100.00 each)

A certificate of proficiency and a prize of $100.00 will be awarded each year until the fund is dissipated, to the graduate selected by the Faculty Board showing greatest proficiency in Dermatology.

SCHOLARSHIPS

All scholarships are assigned for one academic year, unless specifically reawarded on consideration of an application.

Official application forms are obtainable at the Dean's office, where they should be filed four months before the ensuing academic year.

THE DR. SAMUEL LEON FRANK SCHOLARSHIP

(Value $100.00)

This scholarship was established by Mrs. Bertha Rayner Frank as a memorial to the late Dr. Samuel Leon Frank, an alumnus of this university.

It is awarded by the Trustees of the Endowment Fund of the University each year upon nomination by the Faculty Board "to a medical student of the University of Maryland, who in the judgment of said Council, is of good character and in need of pecuniary assistance to continue his medical course."

This scholarship is awarded to a second, third or fourth year student who has successfully completed one year's work in this school. No student may hold this scholarship for more than two years.

THE CHARLES M. HITCHCOCK SCHOLARSHIPS

(Value $100.00 each)

Two scholarships were established from a bequest to the School of Medicine by the late Charles M. Hitchcock, M.D., an alumnus of the university.

These scholarships are awarded annually by the Trustees of the Endowment Fund of the University, upon nomination by the Faculty Board, to students who have meritoriously completed the work of at least the first year of the course in medicine, and who present to the Board satisfactory evidence of a good moral character and of inability to continue the course without pecuniary assistance.

THE RANDOLPH WINSLOW SCHOLARSHIP

(Value $100.00)

This scholarship was established by the late Randolph Winslow, M.D., LL.D.

It is awarded annually by the Trustees of the Endowment Fund of the University, upon nomination by the Faculty Board, to a "needy student of the Senior, Junior, or Sophomore Class of the Medical School."

"He must have maintained an average grade of 85% in all his work up to the time of awarding the scholarship."

"He must be a person of good character and must satisfy the Faculty Board that he is worthy of and in need of assistance."

THE DR. LEO KARLINSKY MEMORIAL SCHOLARSHIP

(Value $125.00)

This scholarship was established by Mrs. Ray Mintz Karlinsky as a memorial to her husband, the late Dr. Leo Karlinsky, an alumnus of the university.

It is awarded annually by the Trustees of the Endowment Fund of the University, upon the nomination of the Faculty Board, to "a needy student of the Senior, Junior or Sophomore Class of the Medical School."

He must have maintained in all his work up to the time of awarding the scholarship a satisfactory grade of scholarship.

He must be a person of good character and must satisfy the Faculty Board that he is worthy of and in need of assistance.

THE UNIVERSITY SCHOLARSHIP

A scholarship which entitles the holder to exemption from payment of tuition fee for the year, is awarded annually by the Faculty Board to a student of the senior class in need of assistance who presents to the Faculty Board satisfactory evidence of good character and scholarship.

THE FREDERICA GEHRMANN SCHOLARSHIP

(Value $200.00)

(Not open to holders of Warfield and Cohen Scholarships)

This scholarship was established by the bequest of the late Mrs. Frederica Gehrmann and is awarded to a third-year student who at the end of the second year has passed the best practical examinations in physiology, pharmacology, pathology, bacteriology, immunology, serology, surgical anatomy and neuroanatomy.

THE CLARENCE AND GENEVRA WARFIELD SCHOLARSHIPS

(Value $300.00 each)

There are five scholarships established by the regents from the income of the fund bequeathed by the will of Dr. Clarence Warfield.

Terms and Conditions: These scholarships are available to students of any of the classes of the course in medicine. Preference is given to students from the counties of the state of Maryland which the Faculty Board may from time to time determine to be most in need of medical practitioners.

Any student receiving one of these scholarships must agree, after graduation and a year's internship, to undertake the practice of medicine, for a term of two years, in the county to which the student is accredited, or in a county selected by the Board. In the event that a student is not able to comply with the condition requiring him to practice in the county to which he is accredited by the Board, the money advanced by the regents shall be refunded by the student.

THE ISRAEL AND CECELIA E. COHEN SCHOLARSHIP

(Value $150.00)

This scholarship was established by the late Eleanor S. Cohen in memory of her parents, Israel and Cecelia E. Cohen. Terms and conditions: This scholarship will be available to students of any one of the classes of the course in medicine; preference is given to students of the counties in the state of Maryland which the Faculty Board may from time to time determine to be most in need of medical practitioners. Any student receiving one of these scholarships must, after graduation and a year's internship, agree to undertake the practice of medicine for a term of two years in the county to which the student is accredited, or in a county selected by the council. In the event that a student is not able to comply with the condition requiring him to practice in the county to which he is accredited by the Board, the money advanced by the regents shall be refunded.

THE DR. HORACE BRUCE HETRICK SCHOLARSHIP

(Value $125.00)

This scholarship was established by Dr. Horace Bruce Hetrick as a memorial to his sons, Bruce Hayward Hetrick and Augustus Christian Hetrick. It is to be awarded by the Faculty Board to a student of the senior class.

THE HENRY ROLANDO SCHOLARSHIP

(Value approximately $250.00)

The Henry Rolando Scholarship was established by the Board of Regents of the University of Maryland from a bequest to the Board by the late Anne H. Rolando for the use of the Faculty of Medicine.

This scholarship will be awarded each academic year on the recommendation of the Faculty Board to a "poor and deserving student."

THE READ SCHOLARSHIPS

The sum of $500.00 is now available to cover two (2) scholarships in the amount of $250.00 each for a given scholastic year. Beginning in 1945, these scholarships were made possible by a donation from the Read Drug and Chemical Company of Baltimore, Maryland. Two students are to be selected by the Dean of the School in collaboration with the Scholarship and Loan Committee of the Medical School with the provision that the students selected shall be worthy, deserving students, residents of the State of Maryland.

LOAN FUNDS

W. K. KELLOGG FUND

This loan fund was established in the academic year 1942 with money granted by the W. K. Kellogg Foundation. The interest paid on the loans, together with the principal of the fund as repaid, will be used to found a rotating loan fund. Loans will be made on the basis of need, character and scholastic attainment.

FACULTY OF MEDICINE LOAN FUND

A Faculty of Medicine Loan Fund was established with money derived from the bequest of Dr. William R. Sanderson, Class 1882, and the gift of Dr. Albert Stein, Class 1907. Loans will be made on the basis of need, character, and scholastic ability.

THE JAY W. EATON LOAN FUND

This fund was established by the local chapter of the Nu Sigma Nu Fraternity in memory of Jay W. Eaton of the class of 1946.

Beginning in 1946 an interest-free loan of $100.00 will be made to some worthy member of the senior class, on recommendation of the Scholarship Committee of the School of Medicine. This loan is to be credited to the tuition fee of the appointed student and is to be repaid by the student within four years following his graduation.

THE SENIOR CLASS LOAN FUND

The senior class of 1945 originated this fund which will accumulate by subscription from among members of each senior class.

The conditions of the agreement provide that the dean of the School of Medicine award a loan of $100.00 to a needy member of the senior class on the recommendation of a self-perpetuating committee of two members of the faculty.

Loans from this fund are to be credited to the tuition fee of the appointed student and are to be repaid within five years from the date of graduation.

THE STUDENT AID FUND FOR SENIORS

This fund was originated by the class of 1950 and is sponsored by the senior class of each succeeding year. The purpose of the fund is to provide financial aid for any deserving member of the senior class. All members of the senior class are eligible to apply for a loan. Applications may be filed at the office of the dean.

The conditions of the agreement provide that the Scholarship and Loan Committee award loans to members of the senior class on recommendation of a self-perpetuating committee of two members of the faculty who may call on the president of the senior class for assistance, if desired.

Loans from this fund are made on a non-interest bearing basis and are payable within five years. A signed note is required. No co-signers are necessary.

ORGANIZATION OF THE CURRICULUM

The curriculum is organized under fifteen departments.

1. Anatomy.
2. Physiology.
3. Bacteriology and Immunology.
4. Biological Chemistry.
5. Pharmacology and Materia Medica.
6. Pathology.
7. Medicine (including Medical Specialties).
8. Surgery (including Surgical Specialties).
9. Obstetrics.
10. Gynecology.
11. Ophthalmology.
12. Roentgenology.
13. Anaesthesiology.
14. Psychiatry.
15. Pediatrics.

The instruction is given in four academic years of graded work.

Several courses of study extend through two years or more, but in no case are the students of different years thrown together in the same course of teaching.

The first and second years are devoted largely to the study of the structures, functions and chemistry of the normal body. Laboratory work occupies most of the student's time during these two years.

Some introductory instruction in medicine and surgery is given in the second year. The third and fourth years are almost entirely clinical.

A special feature of instruction in the school is the attempt to bring together teacher and student in close personal relationship. In many courses of instruction the classes are divided into small groups and a large number of instructors insures attention to the requirements of each student.

In most courses the final examination as the sole test of proficiency has disappeared and the student's final grade is determined largely by partial examinations, recitations and assigned work carried on throughout the course.

DEPARTMENT OF ANATOMY

Eduard Uhlenhuth	Professor of Anatomy, and Head of Department
Frank H. J. Figge	Professor of Anatomy
Otto C. Brantigan	Professor of Surgical Anatomy
O. G. Harne	Associate Professor of Anatomy
Vernon E. Krahl	Associate Professor of Anatomy
R. Dale Smith	Associate Professor of Anatomy
W. Wallace Walker	Associate Professor of Surgical Anatomy
John F. Lutz	Assistant Professor of Anatomy
William B. Settle	Assistant Professor of Surgical Anatomy
Karl F. Mech	Associate in Anatomy
Herbert E. Reifschneider	Associate in Surgical Anatomy
Harry C. Bowie	Associate in Surgical Anatomy
Ross Z. Pierpont	Associate in Surgical Anatomy
V. V. Brunst	Research Associate in Anatomy
H. Patterson Mack	Instructor in Anatomy
Louis O. J. Manganiello	Instructor in Anatomy
Charles W. Hawkins	Instructor in Anatomy
Richard M. Garrett	Assistant in Surgical Anatomy
Geraldine F. Wolfe	U. S. P. H. Fellow
DeWitt T. Hunter	John F. B. Weaver Fellow in Anatomy
William E. Loechel	Albert E. Goldstein Fellow in Anatomical Art

Gross Anatomy. *First Year.* First semester. The gross structure of the human body, studied by dissection of the human cadaver. The entire human body is dissected. Approximately 390 hours; of these 88 hours are devoted to lectures and conferences, the rest to laboratory work and demonstrations. Drs. Uhlenhuth, Krahl, Smith, Mech, and Hawkins.

First Year. First Semester. Peripheral Nervous System. A lecture course of approximately 32 hours, in two-hour periods each Saturday morning. Dr. Uhlenhuth.

First Year. First Semester. The Microscopic Structure of the Organs, Tissues and Cells of the Human Body.

This course will present an integrated study of the histology and embryology of the human body. While much of the time is devoted to the study of fixed and stained non-living tissues and organs, the development of a concept of the dynamic and functional aspects of living cells and organs is the primary goal of the course. 150 hours. Dr. Figge, Prof. Harne, Drs. Lutz, Mack and Manganiello.

First Year. Second Semester. The Central Nervous System. The study of the detailed anatomy of the central nervous system will be coordinated with the structure and function of the entire nervous system. This study will require the dissection of a human brain and the examination of stained microscopic sections of various levels of the brain stem. 100 hours. Dr. Figge, Prof. Harne, Dr. Lutz, Mack and Manganiello.

Second Year. Second Semester. Topographic and Surgical Anatomy. The course is designed to bridge the gap between abstract anatomy and clinical anatomy as applied to the study and practice of medicine and surgery. Students are required to dissect and demonstrate all points, outlines and regions of the cadaver. Underlying regions are dissected to bring out outlines and relations of structures. Dr. Brantigan and staff.

Total hours: 96

Graduate and Postgraduate Courses. Consult the general catalog of the University of Maryland for descriptions of these courses.

DEPARTMENT OF PHYSIOLOGY

William R. Amberson	Professor of Physiology
Dietrich C. Smith	Professor of Physiology
Frederick P. Ferguson	Assistant Professor of Physiology
J. McCullough Turner	Assistant Professor of Physiology
Samuel L. Fox	Instructor in Physiology
Sylvia Himmelfarb	Assistant in Physiology
Frances C. Brown	Assistant in Physiology
Richard F. C. Egan	John F. B. Weaver Fellow in Physiology

The course in physiology is given in two parts:

First Year. Second Semester. Neuro-muscular physiology is presented in two lectures a week, without laboratory work.

Second Year. First Semester. The remainder of the subject is presented in four lectures, one conference, and two laboratory periods a week.

The fundamental concepts of physiology are presented with special reference to mammalian problems.

Total hours: 224.

Graduate Courses. Consult the catalogue of the Graduate School for descriptions of the graduate courses offered by members of the staff.

DEPARTMENT OF BACTERIOLOGY AND IMMUNOLOGY

Frank W. Hachtel	Professor of Bacteriology and Head of the Department
Edward Steers	Associate Professor of Bacteriology
Andrew G. Smith	Assistant Professor of Bacteriology
H. Edmund Levin	Associate in Bacteriology
Hazel Y. Pruitt	Assistant in Bacteriology
Merrill J. Snyder	Instructor in Bacteriology
Joseph R. Merkel	Research Assistant in Bacteriology

Second Year. First Semester. The principles of general bacteriology are taught by quiz, conference, and lecture.

Instruction given in the laboratory includes the methods of preparation of culture media, the study of pathogenic bacteria, and the bacteriological examination of water and milk. The bacteriological diagnosis of communicable diseases is also included.

Second Year. Second Semester. The principles of immunology are presented by means of quizzes, conferences and lectures.

The course includes a consideration of infection and immunity, the nature and action of the various antibodies, complement fixation and flocculation tests, hypersensitiveness, and the preparation of bacterial vaccines.

Experiments are carried out by the class in the laboratory. During the latter half of the semester the class is divided into sections.

Total hours: Bacteriology 120.
Immunology 72.

Graduate Courses. Consult the catalogue of the Graduate School for descriptions of the graduate courses offered by members of the staff.

DEPARTMENT OF BIOLOGICAL CHEMISTRY

Emil G. Schmidt	Professor of Biological Chemistry and Head of the Department
Edward J. Herbst	Assistant Professor of Biological Chemistry
Raymond E. Vanderlinde	Assistant Professor of Biological Chemistry
William H. Summerson	Lecturer in Biological Chemistry
Ann Virginia Brown	Instructor in Biological Chemistry
Elizabeth M. S. Boyle	Research Assistant in Biological Chemistry
Jean D. Nimmo	Research Assistant in Biological Chemistry
Dorothy D. Hubbard	Weaver Fellow in Biological Chemistry

First Year. Second Semester. This course is designed to present the principles of biological chemistry and to indicate their applications to the clinical aspects of medicine. The phenomena of living matter and its chief ingredients, secretions and excretions are discussed in lectures and conferences and examined experimentally. Training is given in biochemical methods of investigation. Total hours: 208.

Graduate Courses. Consult the catalogue of the Graduate School for descriptions of the graduate courses offered by members of the staff.

DEPARTMENT OF PHARMACOLOGY

John C. Krantz, Jr.	Professor of Pharmacology and Head of the Department
C. Jelleff Carr	Associate Professor of Pharmacology
Harry K. Iwamoto	Assistant Professor of Pharmacology
Ruth Musser	Instructor in Pharmacology
Joseph G. Bird	Assistant in Pharmacology
Amedeo S. Marrazzi	Lecturer in Pharmacology
William G. Harne	Demonstrator in Pharmacology
Frederick K. Bell	Fellow in Pharmacology
Mary S. Fassel	Emerson Fellow in Pharmacology
John B. Harmon	Emerson Fellow in Pharmacology
Raymond M. Burgison	Fellow in Pharmacology

Go Lu	Fellow in Pharmacology
N. Joyce Knapp	Eli Lilly Fellow in Pharmacology
Robert Simonoff	Ohio Chemical Co., Fellow in Pharmacology

This course is designed to include those phases of pharmacology necessary for an intelligent use of drugs in the treatment of disease. The didactic instruction includes materia medica, pharmacy, prescription-writing, toxicology, posology, pharmacodynamics, and experimental therapeutics. The laboratory exercises parallel the course of lectures.

In addition, optional conference periods and lectures are available for students desiring further instruction or advice.

Total hours: 216.

Graduate Courses. Consult the catalogue of the Graduate School for descriptions of the graduate courses offered by members of the staff.

DEPARTMENT OF PATHOLOGY

Hugh R. Spencer	Professor of Pathology and Head of the Department
Robert B. Wright	Associate Professor of Pathology
C. Gardner Warner	Associate Professor of Pathology
Walter C. Merkel	Associate Professor of Pathology
Dexter L. Reimann	Associate Professor of Pathology
John A. Wagner	Associate Professor of Pathology
Albert E. Goldstein	Assistant Professor of Pathology
Milton S. Sacks	Associate in Pathology
Benedict Skitarelic	Associate in Pathology
Donald E. Fisher	Associate in Pathology
Charles P. Barnett	Associate in Pathology
Conrad B. Acton	Instructor in Pathology
Howard B. Mays	Instructor in Pathology
Ephraim T. Lisansky	Instructor in Pathology
D. McClelland Dixon	Instructor in Pathology
William B. VandeGrift	Instructor in Pathology
William J. Bryson	Instructor in Pathology
Karl F. Mech	Instructor in Pathology
Seymour W. Rubin	Instructor in Pathology
Theodore Kardash	Instructor in Pathology
William C. Manion	Instructor in Pathology
Louis C. Gareis	Instructor in Pathology

Courses of instruction in pathology are given during the second and third years. The courses are based on the previous study of normal structure and function and aim to outline the history of disease. The relationship between clinical symptoms and anatomical lesions is constantly stressed.

General Pathology. *Second Semester, Second Year.* This course includes the study of disturbances of the body fluids; disturbances of structure, nutrition and metabolism of cells; disturbances of fat, carbohydrate and protein metabolism; disturbances of pigment metabolism; inflammation and tumors.

Laboratory instruction is based on the study of prepared slides (loan collection) and corresponding gross material.

Applied Pathology, Including Gross Morbid Anatomy and Morbid Physiology. *Third Year.* The laboratory instruction in this course is carried out in small teaching museums where prepared specimens and material from autopsies with clinical histories and sections are available for study. For this work the class is divided into small groups. Clinical correlation is stressed.

Autopsies. *Third Year.* Students in small groups attend autopsies at the morgues of the University Hospital and the Baltimore City Hospitals.

Clinical-Pathological Conference. (*Fourth Year.*) These exercises are held in collaboration with the various clinical departments. Selected cases are discussed and autopsy findings are presented.

Second year	184 hours
Third year	160 hours
Fourth year	30 hours
Total	374 hours

DEPARTMENT OF MEDICINE

Maurice C. Pincoffs	Professor of Medicine and Head of the Department
T. Nelson Carey	Professor of Clinical Medicine
Thomas P. Sprunt	Professor of Clinical Medicine
H. Raymond Peters	Professor of Clinical Medicine
Louis A. M. Krause	Professor of Clinical Medicine
William S. Love, Jr.	Associate Professor of Medicine
Thomas C. Wolff	Associate Professor of Medicine
Howard M. Bubert	Associate Professor of Medicine
J. Sheldon Eastland	Associate Professor of Medicine
Milton S. Sacks	Associate Professor of Medicine
Lewis P. Gundry	Associate Professor of Medicine
Samuel Morrison	Associate Professor of Medicine
Theodore E. Woodward	Associate Professor of Medicine
William H. Smith	Associate Professor of Clinical Medicine
George McLean	Assistant Professor of Medicine
Wetherbee Fort	Assistant Professor of Medicine
Frank J. Geraghty	Assistant Professor of Medicine
H. Vernon Langeluttig	Assistant Professor of Medicine
Sol Smith	Assistant Professor of Medicine
Edward F. Cotter	Assistant Professor of Medicine
C. Edward Leach	Assistant Professor of Medicine
Ephraim T. Lisansky	Assistant Professor of Medicine
Samuel T. R. Revell, Jr.	Assistant Professor of Medicine
Henry J. Marriott	Assistant Professor of Medicine
Samuel Legum	Associate in Medicine
Robert A. Reiter	Associate in Medicine
W. Grafton Herspberger	Associate in Medicine
Meyer W. Jacobson	Associate in Medicine
Conrad B. Acton	Associate in Medicine
Francis G. Dickey	Associate in Medicine
Lawrence M. Serra	Associate in Medicine
Marie A. Anderesch	Associate in Medicine and Lecturer in Biological Chemistry
Harry M. Robinson, Jr.	Associate in Medicine

William K. Waller	Associate in Medicine
Arthur Karfgin	Associate in Medicine
M. Paul Byerly	Associate in Medicine
Henry W. D. Holljes	Associate in Medicine
S. Edwin Muller	Associate in Medicine
Sidney Scherlis	Associate in Medicine
Kurt Levy	Associate in Medicine
Wilfred H. Townshend	Associate in Medicine
Alvin J. Hartz	Associate in Medicine
James R. Karns	Associate in Medicine
Edmund G. Beacham	Associate in Medicine
Richard A. Carey	Associate in Medicine
Philip D. Flynn	Instructor in Medicine
Edward S. Kallins	Instructor in Medicine
John A. Myers	Instructor in Medicine
William G. Helfrich	Instructor in Medicine
M. Paul Padget	Instructor in Medicine
Leon Ashman	Instructor in Medicine
Joseph E. Muse	Instructor in Medicine
Daniel Wilfson, Jr.	Instructor in Medicine
William H. Kammer, Jr.	Instructor in Medicine
Samuel J. Hankin	Instructor in Medicine
Frederick J. Vollmer	Instructor in Medicine
Louis J. Kroll	Instructor in Medicine
John R. Davis	Instructor in Medicine
Ernest G. Guy	Instructor in Medicine
John B. deHoff	Instructor in Medicine
Jonas Cohen	Instructor in Medicine
Charles F. Brambel	Instructor in Medicine
Walter Karfgin	Instructor in Medicine
L. Ann Hellen	Instructor in Medicine
Audrey M. Funk	Instructor in Medicine
J. Emmett Queen	Instructor in Medicine
Leon A. Kochman	Instructor in Medicine
Robert E. Bauer	Instructor in Medicine
C. Herman Williams	Instructor in Medicine
Morris Fine	Assistant in Medicine
Rollin C. Hudson	Assistant in Medicine
Stephen J. Van Lill, III	Assistant in Medicine
Franklin E. Leslie	Assistant in Medicine
Adam Swiss	Assistant in Medicine
John C. Osborne	Assistant in Medicine
Stuart D. Sunday	Assistant in Medicine
Irvin B. Kemick	Assistant in Medicine
Raymond M. Lauer	Assistant in Medicine
Maurice Feldman, Jr.	Assistant in Medicine
James J. Nolan	Assistant in Medicine
Lauriston L. Keown	Assistant in Medicine
Charles E. Shaw	Assistant in Medicine
Joseph G. Bird	Assistant in Medicine

GENERAL OUTLINE

SECOND YEAR

Introduction to clinical medicine.

(a) Introductory physical diagnosis. (1 hour a week, first semester; 2 hours a week, second semester.)

(b) Medical clinics. (1 hour a week, second semester.)

THIRD YEAR

I. The methods of examination: (a) History taking. (b) Physical diagnosis. (c) Clinical pathology.

Instruction includes lectures and practice in the wards, outpatient department and laboratory.

II. The principles of medicine:

(a) Lectures, clinics and demonstrations in general medicine, neurology, and preventive medicine.

Third Year teaching of physical diagnosis is carried out chiefly in the various units of the City Hospital.

FOURTH YEAR

The practice of medicine:

I. Clinical clerkship on the medical wards (31 hours a week for ten weeks).

(a) Responsibility, under supervision, for the history, physical examination, laboratory examinations and progress notes of assigned cases.

(b) Ward classes, ward rounds and conferences in general medicine, the medical specialties, and therapeutics.

II. Dispensary work in the medical specialties.

III. Clinical-pathological conferences (1 hour a week).

The medical dispensary of the University Hospital is utilized for teaching in the third year. Each student spends two hours daily for ten weeks in dispensary work. The work is done in groups of four to six students under an instructor. Systematic history-taking is especially stressed. Physical findings are demonstrated. The student becomes familiar with the commoner acute and chronic disease processes.

Clinical clerkships in the Fourth Year are served on the medical wards of both the University and Mercy Hospitals.

PHYSICAL DIAGNOSIS

T. CONRAD WOLFF
Associate Professor of Medicine, and Head of the Division of Physical Diagnosis

ROBERT A. REITER	Associate in Medicine
SAMUEL LEGUM	Associate in Medicine
IRVING FREEMAN	Associate in Medicine
GRAFTON HERSPERGER	Associate in Medicine
KURT LEVY	Associate in Medicine
EDMUND G. BEACHAM	Associate in Medicine
ALVIN J. HARTZ	Associate in Medicine
LOUIS KROLL	Instructor in Medicine
DANIEL WILFSON	Instructor in Medicine
LEON ASHMAN	Instructor in Medicine
JOSEPH MUSE	Instructor in Medicine

Samuel Hankin	Instructor in Medicine
John B. DeHoff	Instructor in Medicine
William G. Helfrich	Instructor in Medicine
Leon A. Kochman	Instructor in Medicine
Stuart D. Sunday	Assistant in Medicine
Elizabeth D. Sherrill	Assistant in Medicine

The course in physical diagnosis starts with the first semester of the Sophomore year and ends with the termination of the second semester of the Junior year.

First Semester—Second Year—Lecture, one hour weekly covering the technique of history writing and the mechanics of the physical signs elicited in the normal person through inspection, palpation, percussion and auscultation.

Second Semester—Second Year—Lecture, one hour weekly, covering the technique of history writing in cases involving disease, and the mechanics of pathological physical signs on inspection, palpation, percussion and auscultation.

In the third and fourth quarters small tutorial groups are formed, each under the direction of an instructor. Experience in physical examination of normal individuals is given in the third quarter for one afternoon weekly. In the fourth quarter the students become acquainted with abnormal signs through examination of hospital patients.

Third Year—a. The class is divided into four sections. Each section receives bedside instruction in physical diagnosis for seven weeks (2 hrs. daily). For this purpose small groups under an instructor are formed. The instruction is carried on in the Baltimore City Hospitals but in addition advantage is occasionally taken of the clinical opportunities in other institutions.

b. Lecture course (1 hr. weekly for 15 weeks) covering the mechanisms of abnormal signs.

TROPICAL MEDICINE

Certain phases of tropical medicine are considered in the course on clinical pathology. In addition, a course of lectures and demonstrations is given to the entire fourth year class.

TUBERCULOSIS

During the third year in connection with the instruction in physical diagnosis a practical course is given at the Municipal Tuberculosis Hospital. Stress is laid upon the recognition of the physical signs of the disease, as well as upon its symptomatology and gross pathology.

CARDIOLOGY

In the third year a series of lectures and clinics correlated with pathological studies is given the entire class.

In the fourth year students are assigned for two periods weekly for five weeks to the Cardiac Clinic and attend consultation rounds and conferences on cardiovascular cases on the Medical wards.

GASTRO-ENTEROLOGY

THEODORE H. MORRISON	Clinical Professor of Gastro-Enterology
SAMUEL MORRISON	Associate Professor of Gastro-Enterology
MAURICE FELDMAN	Assistant Professor of Gastro-Enterology
ZACHARIAH MORGAN	Assistant Professor of Gastro-Enterology
FRANCIS G. DICKEY	Associate in Medicine
Z. VANCE HOOPER	Associate in Gastro-Enterology
ALBERT J. SHOCHAT	Instructor in Gastro-Enterology
ALFRED S. LEDERMAN	Assistant in Gastro-Enterology

Third Year. A series of six lectures is given on the diseases of the digestive tract.

Fourth Year. Students attend the gastro-intestinal clinic for two periods weekly for five weeks, and consultation rounds on gastro-intestinal cases on the Medical wards. Practical instruction is given in the use of modern methods of study of the diseases of the gastro-intestinal tract.

NEUROLOGY

LEON FREEDOM	Associate Professor of Neurology
PHILIP F. LERNER	Assistant Professor of Neurology
WILLIAM L. FEARING	Associate in Neurology
EDWARD F. COTTER	Associate in Neurology
HARRY TEITELBAUM	Associate in Neurology
GEORGE G. MERRILL	Associate in Neurology

Second Year. Fifteen one-hour lectures are given to correlate the anatomy and physiology of the nervous system with clinical neurology.

Third Year. Twenty hours of instruction are given to the whole class in neuropathology supplemented with pathological demonstrations. Sixteen lecture-demonstrations are given in which the major types of the diseases of the nervous system are discussed. A course is also given at the Baltimore City Hospitals, comprising eight periods of two hours each, in which the students in small groups carry out complete neurological examinations of selected cases which illustrate the chief neurological syndromes.

Fourth Year. Fourth year students in the Medical section attend neurological consultation rounds on ward patients in the University and Mercy Hospitals. All patients presented at these clinics are carefully examined.

Dispensary Instructions. Small sections are instructed in the neurological dispensary of the Mercy Hospital five afternoons each week. In this way students are brought into contact with nervous diseases in their early and late manifestations.

DERMATOLOGY AND SYPHILOLOGY

HARRY M. ROBINSON, SR.	Professor of Dermatology
FRANCIS A. ELLIS	Assistant Professor of Dermatology
HARRY M. ROBINSON, JR.	Assistant Professor of Dermatology
EUGENE S. BERESTON	Associate in Dermatology
A. ALBERT SHAPIRO	Associate in Dermatology

Israel Zeligman	Associate in Dermatology
R. C. V. Robinson	Associate in Dermatology
Lucile J. Caldwell	Instructor in Dermatology
Benjamin Highstein	Instructor in Dermatology
Mark B. Hollander	Instructor in Dermatology
V. Harwood Link	Instructor in Dermatology
Morris M. Cohen	Instructor in Dermatology
William R. Bundick	Instructor in Dermatology

The third year class receives six lecture-demonstrations on the principles of dermatology by Dr. Robinson.

The senior course consists of conferences and demonstrations of the common skin diseases and venereal diseases in the outpatient dermatologic and syphilis clinics and on the medical wards.

CLINICAL PATHOLOGY

Milton S. Sacks	Associate Professor of Medicine and Head of the Division of Clinical Pathology
John A. Wagner	Associate Professor of Pathology
Sol Smith	Assistant Professor of Medicine
Marie A. Andersch	Biochemist, University Hospital, Associate in Medicine
S. Edwin Muller	Associate in Medicine
L. Ann Hellen	Instructor in Medicine
Audrey M. Funk	Instructor in Medicine
Martin H. Gorten	Baltimore RH Laboratory Fellow in Medicine
Joseph B. Workman	Baltimore RH Laboratory Fellow in Medicine

Third Year. First and second semesters. The course in Clinical Pathology is designed to train the student in the performance and interpretation of fundamental diagnostic laboratory procedures used in clinical medicine.

During the first semester the work is devoted to a thorough consideration of diseases of the hematopoietic system. In the second semester, laboratory work in urinalysis, gastric analysis, hepatic, pancreatic and renal functions, together with a thorough discussion of underlying biochemical and physiological mechanisms is undertaken. During this semester examination of cerebrospinal fluid, transudates and exudates is included. Elements of clinical parasitology complete the work in this semester.

Each student provides his own microscope and blood counting equipment. A completely equipped locker is assigned to every student.

Total Hours: 128.

Fourth Year. During the fourth year the student applies in the laboratories of the various affiliated hospitals the knowledge acquired during the preceding year. A completely equipped locker is assigned enabling him to work independent of the general laboratories. Instructors are available during certain hours to give necessary assistance and advice.

HYGIENE AND PUBLIC HEALTH

Huntington Williams	Professor of Hygiene and Public Health
William H. F. Warthen	Associate Professor of Hygiene and Public Health
Ross Davies	Associate Professor of Hygiene and Public Health

Third Year. A one-hour lecture is given to the whole class each Tuesday during both semesters. Basic instruction is afforded in the clinical and public health aspects of the communicable diseases including syphilis and tuberculosis. The lectures are under the auspices of the Department of Medicine and are given by staff members of that department, including physicians representing pediatrics, hygiene and public health, and by staff members of the Baltimore City Health Department.

Fourth Year. Elective work is also assigned at the Western Health District Building of the City Health Department, 617 West Lombard Street, where the District Health Officer arranges for home visiting and the student prepares and presents a Home Survey Report.

The course deals with the fundamentals of public health and supplements the work in the third year. The major emphasis in both years is on the practice of preventive medicine and the relation of prevention to diagnosis and treatment, and on the civic and social implications of the medical services.

LEGAL MEDICINE

Russell S. Fisher	Associate Professor of Legal Medicine
Henry C. Freimuth	Associate in Legal Medicine
Stanley H. Durlacher	Associate in Legal Medicine
William V. Lovitt, Jr.	Instructor in Legal Medicine

Third Year. This course embraces a summary of medical jurisprudence including the laws governing the practice of medicine, industrial compensation and malpractice, proceedings in criminal and civil prosecution, medical evidence and testimony, identification of bodies, injuries by blunt force, gunshot and other mechanisms, natural and homicidal deaths, medicolegal toxicology and the medicolegal autopsy. (12 hours.)

Elective Course (summer). A small number of students may upon application be assigned to elective work in the laboratory of the Chief Medical Examiner of the State of Maryland.

DEPARTMENT OF PEDIATRICS

J. Edmund Bradley	Professor of Pediatrics and Head of the Department
C. Loring Joslin	Professor of Pediatrics
Edgar B. Friedenwald	Professor of Clinical Pediatrics
A. H. Finkelstein	Associate Professor of Pediatrics
Gordon E. Gibbs	Associate Professor Clinical Research
Frederick B. Smith	Associate Clinical Professor of Pediatrics
Albert Jaffe	Associate Clinical Professor of Pediatrics
Samuel S. Glick	Assistant Professor of Pediatrics
Jerome Fineman	Assistant Professor of Pediatrics
Gibson J. Wells	Assistant Professor of Pediatrics
William M. Seabold	Assistant Professor of Pediatrics
Clewell Howell	Associate in Pediatrics
G. Bowers Mansdorfer	Associate in Pediatrics
Arnold F. Lavenstein	Instructor in Pediatrics
Mary L. Hayleck	Instructor in Pediatrics

Israel P. Meranski	Instructor in Pediatrics
Melchijah Spragins	Instructor in Pediatrics
Thomas A. Christensen	Instructor in Pediatrics
Joseph M. Cordi	Instructor in Pediatrics
William Earl Weeks	Assistant in Pediatrics
J. Carlton Wich	Assistant in Pediatrics
O. Walter Spurrier	Assistant in Pediatrics
Lester Caplan	Assistant in Pediatrics
A. Maynard Bacon, Jr.	Assistant in Pediatrics
Donald D. Cooper	Assistant in Pediatrics
Sara Cook	Assistant in Pediatrics
Ruth Baldwin	Assistant in Pediatrics
Garrett Deane	Fellow in Pediatrics
Albert Powell	Fellow in Pediatrics

Third Year. The course is presented as follows:

Lectures on infant feeding and the fundamentals of diseases of infants and children. (15 hours.)

Lectures on contagious diseases in conjunction with the Department of Hygiene and Preventive Medicine. (14 hours.)

A special course in physical diagnosis is given at City Hospitals. (20 hours.)

Clinical conferences demonstrating diseases of the new-born. (6 hours.)

Fourth Year. A clinic in the amphitheatre is given at which time patients are shown demonstrating the features of the diseases discussed. (30 hours.)

Conferences and demonstrations are given in problems of diagnosis, care, treatment and clinical pathology of diseases of infants and children. (30 hours.)

Students are assigned subjects on which to prepare theses.

Clinical clerkships are assigned on the pediatric wards, where experience is gained in taking histories, making physical examinations, doing routine laboratory work, and following up patients' progress. This is under the supervision of the visiting staff. (140 hours.)

Instruction is given in the pediatric clinic of the out-patient department of the University Hospital. This consists of 1½ hours daily for five weeks—30 minutes each day is devoted to a clinical demonstration of some interesting case by a member of the staff; one hour daily to taking histories and making physical examinations under the supervision of an instructor. (45 hours.)

Total hours: 300.

DEPARTMENT OF PSYCHIATRY

Jacob E. Finesinger	Professor of Psychiatry and Head of the Department
H. Whitman Newell	Associate Professor of Psychiatry
Harry M. Murdock	Assistant Professor of Psychiatry
Philip S. Wagner	Assistant Professor of Psychiatry
Hans W. Loewald	Assistant Professor of Psychiatry
William W. Elgin	Assistant Professor of Psychiatry
J. G. N. Cushing	Assistant Professor of Psychiatry
Kathryn L. Schultz	Assistant Professor of Psychiatry
Isadore Tuerk	Associate in Psychiatry
Ephraim T. Lisansky	Associate in Psychiatry

Kathryn Dice	Associate in Clinical Psychology
Robert G. Grenell	Research Associate in Psychiatry
Elizabeth LaForge	Associate in Psychiatric Social Work
A. Russell Anderson	Instructor in Psychiatry
Francis J. McLaughlin	Instructor in Psychiatry
Samuel Novey	Instructor in Psychiatry
Marion W. Mathews	Instructor in Psychiatry
Enoch Callaway, Jr.	Instructor in Psychiatry
William N. Fitzpatrick	Assistant in Psychiatry
Gertrude Gross	Assistant in Psychiatry
Marcella Weisman	Assistant in Psychiatric Social Work
William Stark	Fellow in Psychiatry
Marvin Jaffe	Fellow in Psychiatry
Virginia Suttonfield	Fellow in Psychiatry
Marion A. Marfy	Fellow in Clinical Psychology
Jeannette F. Rayner	Research Assistant in Psychiatry

First Year. Fourteen two-hour periods during the second semester are devoted to a consideration of human relations as applied to the practice of medicine. The topics dealt with include personality development, reactions to stress, and situational and social factors in disease. The emphasis is upon observing, understanding and evaluating the personal and social factors in the disease process, in treatment and prevention. Consideration is given to problems of values and scientific methodology as they apply to the work of the physician. Patients with common medical and surgical complaints are interviewed to illustrate methods of interviewing and developing a useful therapeutic relationship. The course is conducted by means of group discussion, supplemented by reading.

Second Year. Fourteen two-hour periods are spent in the first semester in discussions and lectures. The emphasis is on methods of examining patients, and methods of developing and utilizing the doctor-patient relationship. The discussions center about psychopathology, as it operates in disease and in the treatment process. An attempt is made to relate emotional disturbances to what is known in neurophysiology, endocrinology, psychology and sociology. Patients are interviewed and examined to illustrate the general principles and the specific procedures used in the examination of patients. The group discussions are supplemented by suggested reading.

Third Year. Sixteen lecture hours are devoted to further considerations of special psychopathology and the principles of psychotherapy. Specialized forms of treatment are reviewed, but the main emphasis is toward familiarizing the student with forms of therapy feasible in routine medical practice. During 36 clinic hours the student will be supervised in history-taking, mental status and psychometric examination, and follow-up studies of patients.

Fourth Year. A clinical clerkship is offered in the wards of the University Hospital for one month. Patients are assigned for treatment under supervision. Emphasis is placed on diagnosis, methods of interviewing, methods of developing and managing a therapeutic doctor-patient relationship, and carrying out psychotherapy. This is supplemented by seminar meetings for discussion of child psychiatry, psychotherapy, clinical psychology and social service. Topics are assigned from the current literature for group discussion. Four afternoons are spent in the wards of the Spring Grove State Mental Hospital in examining patients with emphasis in the diagnosis, treatment and management of the psychoses. Eight clinics are held for the entire fourth-year class.

DEPARTMENT OF SURGERY

Charles Reid Edwards	Professor of Surgery, and Acting Head of the Department
Walter D. Wise	Professor of Surgery
Elliott H. Hutchins	Professor of Surgery
F. L. Jennings	Professor of Clinical Surgery
D. J. Pessagno	Professor of Clinical Surgery
George H. Yeager	Professor of Clinical Surgery
Monte Edwards	Clinical Professor of Surgery
Otto C. Brantigan	Professor of Clinical Surgery
Harry C. Hull	Professor of Clinical Surgery
Charles A. Reifschneider	Clinical Professor of Traumatic Surgery
Thomas R. Chambers	Associate Professor of Surgery
R. W. Locher	Associate Professor of Clinical Surgery
Edward S. Johnson	Associate Professor of Surgery
Grant E. Ward	Associate Professor of Surgery
Cyrus F. Horine	Associate Professor of Surgery
Charles W. Maxson	Associate Professor of Surgery
C. W. Peake	Associate Professor of Surgery
James W. Nelson	Associate Professor of Surgery
William F. Reinhoff, Jr.	Associate Professor of Surgery
I. Ridgeway Trimble	Associate Professor of Surgery
W. Wallace Walker	Associate Professor of Surgery and Surgical Anatomy
H. F. Bongardt	Assistant Professor of Surgery
I. O. Ridgely	Assistant Professor of Surgery
Simon H. Brager	Assistant Professor of Surgery and Proctology
Thurston R. Adams	Assistant Professor of Surgery
Raymond F. Helfrich	Associate in Surgery
William B. Settle	Associate in Surgery
Arthur G. Siwinski	Associate in Surgery
George Govatos	Associate in Surgery
Joseph V. Jerardi	Associate in Surgery
Herbert E. Reifschneider	Associate in Surgery
Harold H. Burns	Associate in Surgery
William L. Garlick	Associate in Surgery
Harry C. Bowie	Associate in Surgery
William D. Lynn	Research Associate in Surgery
Joseph M. Miller	Lecturer in Surgery
J. Duer Moores	Instructor in Surgery
Calvin Hyman	Instructor in Surgery
Clyde F. Karns	Instructor in Surgery
Daniel R. Robinson	Instructor in Surgery
George H. Brouillet	Instructor in Surgery
John F. Schaefer	Instructor in Surgery
Robert F. Healy	Instructor in Surgery
Robert C. Sheppard	Instructor in Surgery

Samuel E. Proctor	Instructor in Surgery
F. Ford Loker	Instructor in Surgery
E. Roderick Shipley	Instructor in Surgery
Edwin H. Stewart, Jr.	Instructor in Surgery
Patrick C. Phelan, Jr.	Instructor in Surgery
William R. Geraghty	Assistant in Surgery
Howard B. McElwain	Assistant in Surgery
A. V. Buchness	Assistant in Surgery
T. J. Touhey	Assistant in Surgery
Samuel H. Culver	Assistant in Surgery
L. T. Chance	Assistant in Surgery
W. Allen Deckert	Assistant in Surgery
William C. Dunnigan	Assistant in Surgery
Howard L. Zupnik	Assistant in Surgery
Raymond M. Cunningham	Assistant in Surgery
John W. Chambers	Assistant in Surgery
Ross Z. Pierpont	Assistant in Surgery
Michael L. DeVincentis	Assistant in Surgery
Louis E. Goodman	Assistant in Surgery
James N. Cianos	Assistant in Surgery
Richard M. Garrett	Assistant in Surgery

Instruction is given by means of lectures, laboratory work, recitations, dispensary work, bedside instruction, ward classes, and clinics. The work begins in the second year and continues throughout the third and fourth years.

The teaching is done in the anatomical laboratory, operative surgery laboratory, the dispensaries, wards, laboratories and operating rooms of the University and Mercy Hospitals, and in the wards and operating rooms of the Baltimore City Hospitals.

SECOND YEAR

Topographic and Surgical Anatomy. *Second semester.* The course is designed to bridge the gap between anatomy in the abstract and clinical anatomy applied to the study and practice of medicine and surgery.

The teaching is done in the anatomical laboratory. Students are required to dissect and to demonstrate all points, outlines, and regions on the cadaver. Underlying regions are dissected to bring out outlines and relations of structures.

Two lectures and two laboratory periods per week. Drs. Brantigan, Walker, Settle, Bowie, H. E. Reifschneider and Pierpont.

Total hours: 96.

Principles of Surgery. *Second semester.* The course includes discussions of irritants, infection, repair of tissue, healing of tissue, relationship of bacteriology to surgery, modern chemotherapy in surgical diseases, ulcers, wounds, thrombophlebitis, phlebothrombosis, peripheral vascular diseases, thermal burns, injuries due to cold, surgical shock, diseases of the lymphatics, gangrene of the skin and extremities, aneurysms, hemorrhage, varicose veins, embolism, sinuses and fistulae, tetanus, anthrax and actinomycosis.

Lectures, two hours a week for one semester, are given to the whole class. Drs. Adams and Sheppard.

THIRD YEAR

General and Regional Surgery. Lectures, recitations and clinics on the principles of surgery, general surgery including fractures and dislocations are given three hours a week to the whole class. Dr. Hull.

The class is divided into groups and receives instruction in history-taking and surgical pathology under the supervision of the chief of the pathology department of the Baltimore City Hospitals. Instruction is also given in surgical diagnosis and in general surgery at the bedside and in the classroom at this institution by Drs. Hull, C. A. Reifschneider, Brantigan and Adams. Two hours per week are given in orthopaedic surgery by Dr. Voshell, chief of the orthopaedic service of this institution.

Operative Surgery. Two courses in operative surgery are given under the supervision of Dr. Yeager assisted by Drs. Brager, Deckert, Govatos, Gutman, Healy, C. F. Karns, Mech, Joseph Miller, Peake and Rigdon. The class is divided into sections and each section is given practical and individual work under the supervision of instructors.

Surgical Out-patient Department. Under supervision, the student takes the history, makes the physical examination, attempts the diagnosis and, as far as possible, carries out the treatment of ambulatory surgical patients in the University and Mercy Hospitals. Mercy Hospital—Dr. Raymond F. Helfrich assisted by the out-patient staff. University Hospital—Drs. Settle and Sheppard assisted by the out-patient staff.

FOURTH YEAR

Clinics. A weekly clinic is given at Mercy and at the University Hospitals to one-half the class throughout the year. As far as possible this is a diagnostic clinic. Mercy Hospital—Dr. Wise. University Hospital—Dr. C. R. Edwards.

Surgical Pathology:—Mercy Hospital. Specimens from the operating room and museum are studied in the gross and microscopically in relation to the case history. 14 hours. Dr. Pessagno.

Surgery of the Chest:—Mercy Hospital. Operations and conferences. 14 hours. Drs. Rienhoff and Garlick.

Traumatic Surgery. This course deals with operative and post-operative treatment of accident cases and with instructions as to the relationship between the state, the employee, the employer, and the physician's duty to each. One hour a week to sections of the class throughout the year. Dr. C. A. Reifschneider.

Clinical Clerkship. This work includes the personal study of assigned hospital patients under supervision of the staffs of the University and Mercy Hospitals, and embraces history-taking, and physical examination of patients, laboratory examinations, attendance at operations and observation of post-operative treatment.

Ward Classes. Ward-class instruction in small groups will consist of ward rounds, surgical diagnosis, treatment and the after-care of operative cases. Mercy Hospital—Drs. Wise, Hutchins, Blake, Pessagno, Nelson, Trimble, Brager and Jerardi. University Hospital—Drs. C. Reid Edwards, Yeager, Hull and C. A. Reifschneider.

ORTHOPAEDIC SURGERY

Allen Fiske Voshell	Professor of Orthopaedic Surgery
Harry L. Rogers	Clinical Professor of Orthopaedic Surgery
Moses Gellman	Associate Professor of Orthopaedic Surgery
Henry F. Ullrich	Associate Professor of Orthopaedic Surgery
Milton J. Wilder	Assistant Professor in Orthopaedic Surgery
I. H. Maseritz	Associate in Orthopaedic Surgery
Jason H. Gaskel	Instructor in Orthopaedic Surgery
Isaac Gutman	Instructorin Orthopaedic Surgery
Everett D. Jones	Assistant in Orthopaedic Surgery

Didactic, clinical, bedside and out-patient instruction is given in the fourth year at the University and Mercy Hospitals and Dispensaries, Kernan Hospital for Crippled Children at Dickeyville and Baltimore City Hospitals. Instruction is also given in the third year to small groups at the Baltimore City Hospitals.

Weekly lectures throughout the year present all phases of orthopaedic surgery except fractures; brief discussions and demonstration of physical and occupational therapy are included.

Fourth year groups are given more intimate instruction biweekly at one of the above institutions; fracture cases are included.

Third year	60 hours
Fourth year	90 hours
Total	150 hours

OTOLARYNGOLOGY

Edward A. Looper	Professor of Otolaryngology and Head of the Department
Waitman F. Zinn	Professor of Otolaryngology
Thomas R. O'Rourk	Professor of Otolaryngology
Benjamin S. Rich	Associate Professor of Otolaryngology
Frederick T. Kyper	Associate Professor of Otolaryngology
Fayne A. Kayser	Associate Professor of Otolaryngology
Franklin B. Anderson	Associate Professor of Otolaryngology
W. Raymond McKenzie	Assistant Professor of Otolaryngology
Samuel L. Fox	Associate in Otolaryngology
Benjamin H. Isaacs	Associate in Otolaryngology
Robert Z. Berry	Associate in Otolaryngology
Richard J. Cross	Assistant in Otolaryngology
John H. Hirschfeld	Assistant in Otolaryngology
Arthur Ward	Assistant in Otolaryngology

Third Year. Instruction to the whole class is given in the common diseases of the nose and throat, attention being especially directed to infections of the accessory sinuses, the importance of focal infections in the etiology of general diseases and modern methods of diagnosis. Lectures illustrated by lantern slides are given one hour weekly for eight weeks by Dr. Looper.

Fourth Year. Dispensary instruction is given for three hours daily, to small sections at the University and the Mercy Hospitals. The student is afforded an opportunity to study, diagnose and treat patients under supervision. Ward classes and clinical demonstrations are given in periods of one and one-half hours weekly throughout the session in the University and Mercy Hospitals.

The Looper Clinic for bronchoscopy and esophagoscopy, recently established in the University Hospital, affords unusual opportunities for students to study diseases of the larynx, bronchi and esophagus. The clinic is open to students daily from 2 to 4 P.M. under direction of Dr. Looper, and associates.

The Mercy Hospital clinic for bronchoscopy and esophagoscopy is under the direction of Dr. Zinn. In these two clinics the etiology, symptomatology, diagnosis and treatment of foreign bodies in the air and food passages, as well as bronchoscopy, are taught to students as an aid in the diagnosis and treatment of diseases of the lungs.

Third year	9 hours
Fourth year	53 hours
Total	62 hours

GENITO-URINARY SURGERY

W. Houston Toulson	Professor of Genito-Urinary Surgery
Kenneth D. Legge	Professor of Clinical Genito-Urinary Surgery
Howard B. Mays	Assistant Professor of Genito-Urinary Surgery
Francis W. Gillis	Assistant Professor of Genito-Urinary Surgery
John F. Hogan	Assistant Professor of Genito-Urinary Surgery
Austin H. Wood	Associate in Genito-Urinary Surgery
Lyle J. Millan	Associate in Genito-Urinary Surgery
L. K. Fargo	Associate in Genito-Urinary Surgery
Hugh J. Jewett	Associate in Genito-Urinary Surgery
John S. Haines	Associate in Genito-Urinary Surgery
Charles W. Hawkins	Assistant in Genito-Urinary Surgery
Morris A. Fine	Assistant in Genito-Urinary Surgery

Third Year. This course is given for seven hours to the whole class. It consists of lectures and demonstrations, including the use of lantern slides and motion pictures. Dr. Toulson.

Fourth Year. The course includes explanations and demonstrations of urethroscopy, cystoscopy, ureteral catheterization, renal function tests, urography, urine cultures and the various laboratory procedures. The teaching consists of clinics and ward rounds to small groups, and attendance by members of the senior class upon the out-patients in the dispensary. The student is placed on his own responsibility in arriving at a diagnosis. These dispensary classes are conducted at both the Mercy and University Hospitals where practically every variety of urogenital disease is seen and used for teaching purposes.

Third year	6 hours
Fourth year	39 hours
Total	45 hours

PROCTOLOGY

Monte Edwards	Professor of Proctology
Thurston R. Adams	Assistant Professor of Proctology
Simon H. Brager	Assistant Professor of Proctology

Donald B. Hebb	Instructor in Proctology
William T. Supik	Instructor in Proctology
Raymond M. Cunningham	Instructor in Proctology

Third Year. Seven lectures are given to the whole class. The course is for instruction in the diseases of the colon, sigmoid flexure, rectum and anus, and covers the essential features of the anatomy and physiology of the large intestine as well as the various diseases to which it is subject. Dr. Monte Edwards.

Fourth Year. Ward and dispensary instruction is given in the University and Mercy Hospitals, where different phases of the various diseases are taught by direct observation and examination. The use of the proctoscope and sigmoidoscope in the examination of the rectum and sigmoid is made familiar to each student. Mercy Hospital—Drs. Supik and Brager. University Hospital—Drs. Monte Edwards and Adams.

Third year	7 hours
Fourth year	16 hours
Total	23 hours

OTOLOGY

Thomas R. O'Rourk	Professor of Otolaryngology

The course in otology is planned to give a practical knowledge of the anatomy and physiology of the ear, and its proximity and relationship to the brain and other vital structures. The inflammatory diseases, their etiology, diagnosis, treatment and complications are particularly stressed, with emphasis upon their relationship to the diseases of children, head-surgery and neurology.

Third Year. The whole class is given instruction by means of talks, anatomical specimens and lantern slides. Dr. O'Rourk and associates.

Fourth Year. Small sections of the class receive instruction and make personal examinations of patients under the direction of an instructor. The student is urged to make a routine examination of the ear in his ward work in general medicine and surgery. Dr. O'Rourk and associates.

Third year	12 hours
Fourth year	40 hours
Total	52 hours

NEUROLOGICAL SURGERY

Charles Bagley, Jr.	Professor of Neurological Surgery
Richard G. Coblentz	Professor of Clinical Neurological Surgery
James G. Arnold, Jr.	Associate Professor of Neurological Surgery
John A. Wagner	Associate Professor of Pathology and Neuropathology
Robert Oster	Associate in Electro-physiology, and Director of the Hoffberger Electroencephalographic Laboratory
Raymond K. Thompson	Instructor in Neurological Surgery, Director of Neurological Surgery Research
Frank J. Otenasek	Assistant in Neurological Surgery

John W. Chambers	Assistant in Neurological Surgery
Louis O. J. Manganiello	Research Fellow, Fund B, assigned to Neurological Surgery, Exchange Resident in Neurosurgery, Baltimore City Hospitals
Robert M. N. Crosby	Resident in Neurological Surgery, University Hospital, Exchange Resident in Neurosurgery Baltimore City Hospitals
George W. Smith	Hitchcock Fellow in Neurological Surgery, Assigned to Research
José A. Alvarez	Assistant Resident, Baltimore City Hospitals, Assigned to Neurological Surgery
Pomeroy Nichols, Jr.	Assistant Resident in Neurological Surgery, Assigned to Neuropathology, Fund B Fellow
Roy B. Turner	Assistant Resident in Neurological Surgery
James S. Browne	Assigned to Neuropathology, Fund B Fellow, Assistant Resident in Neurological Surgery
August Keil	Assistant Resident in Surgery, Assigned to Neurological Surgery Mercy Hospital

Third year. The course covers instruction in diagnosis and treatment of surgical conditions of the brain, spinal cord and the peripheral nerves. Drs. Bagley, Coblentz, Arnold and Thompson.

Fourth year. Weekly ward rounds and conferences are given at the University Hospital. Drs. Bagley, Coblentz, Arnold and Thompson. Instruction is given (elective) in the out-patient dispensary by Drs. Louis Manganiello, George Smith and José A. Alvarez.

Third year	12 hours
Fourth year	15 hours
Conference and ward rounds (elective)	32 hours
Neurological Surgery Dispensary (elective)	48 hours
Total	107 hours

ONCOLOGY

J. Mason Hundley, Jr.	Professor of Gynecology
Grant E. Ward	Associate Professor of Surgery
Beverley C. Compton	Assistant Professor of Gynecology
John C. Dumler	Assistant Professor of Gynecology
William K. Diehl	Assistant Professor of Gynecology
Everett S. Diggs	Assistant Professor of Gynecology
Ernest I. Cornbrooks, Jr.	Assistant Professor of Gynecology
Arthur G. Siwinski	Associate in Surgery
Edwin H. Stewart	Instructor in Surgery
J. Duer Moores	Instructor in Surgery
Louis F. Goodman	Assistant in Surgery
David B. Gray	National Cancer Institute Trainee
John M. Bloxom, Jr.	National Cancer Institute Trainee
E. Eugene Covington	Assistant Radiologist
Thomas A. Stebbins	Medical Illustrator in Oncology and Gynecology

The purpose of the courses in Oncology is to give students training in the diagnosis and treatment of neoplastic diseases not obtained in other departments and at the same time to correlate this training with that received in surgery, medicine, roentgenology and other specialties.

Third year. Six didactic lectures are given on the diagnosis and treatment of cancer of the generative organs. Dr. Hundley and staff.

Five lectures in general oncology are given to the entire Junior Class at the end of the year. The increasing importance of the cancer problem is emphasized. The biological aspects of cancer and the relation of hormones, carcinogenic agents, and etiological factors are discussed. The gradation of neoplasms, and the biophysical effects of irradiation therapy are presented. The diagnosis, surgical and radiological treatment of neoplasms of the head and neck, oral cavity, skin, breasts, and hemopoietic system are discussed. Dr. Ward and staff.

Fourth Year. Ten senior students of the University section are assigned to the Oncology clinic. Five students are assigned to the Tuesday morning clinic, and the alternate group to the Friday morning clinic. The diagnosis and treatment, both surgical and radiological are discussed in the presence of a staff member of the departments of Pathology, Radiology, and Surgery.

An outpatient Gynecological Clinic is held bi-weekly which affords an opportunity for instruction of small groups of students, which are assigned in rotation, in the various phases of malignancy of the generative organs. Weekly ward rounds and operative clinics are held for seniors.

	Onocology	*Gynecology*	*Total*
Third year	5 hours	6 hours	11 hours
Fourth year	12 hours	16 hours	28 hours
Total	17 hours	22 hours	39 hours

DENTISTRY

[1]BRICE M. DORSEY	Professor of Oral Surgery
[1]MYRON S. AISENBERG	Professor of Pathology
[1]JOSEPH C. BIDDIX, JR.	Professor of Oral Diagnosis
[1]KYRLE W. PREIS	Professor of Orthodontics
[1]HARRY M. ROBINSON, SR.	Professor of Dermatology
[1]GRAYSON W. GAVER	Professor of Dental Prosthesis
[1]ERNEST B. NUTTALL	Professor of Crown and Bridge
[1]KENNETH V. RANDOLPH	Professor of Operative Dentistry
[1]EDWARD C. DOBBS	Professor of Pharmacology
GEORGE H. YEAGER	Professor of Clinical Surgery
GRANT E. WARD	Associate Professor of Surgery and Oral Surgery
[1]HUGH H. HICKS	Associate Professor of Periodontology
[1]LEWIS C. TOOMEY	Associate Professor of Oral Surgery
GEORGE MCLEAN	Assistant Professor of Medicine
[1]WILBUR O. RAMSAY	Assistant Professor of Clinical Dental Prosthesis
[1]SAMUEL H. BRYANT	Instructor in Oral Diagnosis

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[1] Faculty Member, School of Dentistry.

[1]Russell Gigliotti	Instructor in Clinical Oral Diagnosis
[1]Joseph P. Cappuccio	Instructor in Oral Surgery
[1]Conrad L. Inman	Instructor in Anesthesiology

This section has been reorganized for the teaching of both medical and dental students. There has been established a division in the out-patient department, and beds will be provided in the University Hospital, for the care of patients who will be available for the teaching of students from both schools.

Senior year: clinics weekly.

Ward instruction and group teaching are given. This includes diagnosis and treatment of diseases of the face, mouth and jaws.

INDUSTRIAL MEDICINE AND SURGERY

———————	Professor of Clinical Medicine
Charles A. Reifschneider	Clinical Professor of Traumatic Surgery
Thurston R. Adams	Assistant Professor of Surgery

This section is under the combined supervision of the medical and surgical departments. It is a cooperative effort by members of the medical school and hospital staff to afford means for clinical and laboratory study of the patient who has been subjected to traumatic or medical industrial hazard, so that adequate care may be instituted to promote his physical well-being. The facilities of the laboratories of the medical school and hospital are available as required.

Under direction of this department limited undergraduate instruction is given, especially in the methods of examination and of keeping records and in the general medico-legal principles as they affect the industrial employee, the employer, the general insurers, the physician and the hospital. There is also instruction on methods of making life insurance and other physical examinations, whether for employment or for health purposes. The wards of the University, Mercy and Baltimore City Hospitals provide for bed-side instruction.

Total hours: 8.

PLASTIC SURGERY

Edward A. Kitlowski	Clinical Professor of Plastic Surgery
Clarence P. Scarborough	Instructor in Plastic Surgery
Walter J. Benavent	Assistant in Plastic Surgery

This course is designed to acquaint students with the problems of reconstructive and plastic surgery. A subdivision in the dispensary has been established and beds for patients will be available for instruction in this course at the University and Baltimore City Hospitals and Kernan's Hospital for Crippled Children.

Third Year. Five lectures are given to the whole class. Dispensary instruction is provided on Mondays and Fridays.

Fourth Year. Ward rounds and operative demonstrations are held at the hospitals.

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[1] Faculty Member, School of Dentistry.

SPEECH TRAINING CLINIC

Edward A. Kitlowski	Clinical Professor of Plastic Surgery
Ray Ehrensberger	Professor of Speech
Merle Ansberry	Associate Professor of Speech

This department has been installed in conjunction with the Department of Speech of the University at College Park to evaluate the speech difficulties in children with congenital defects. Admission to the Clinic is by appointment only. The Clinic operates all day Thursdays.

DEPARTMENT OF OBSTETRICS

Louis H. Douglass	Professor of Obstetrics, and Head of the Department
J. Morris Reese	Associate Professor of Obstetrics
Isadore A. Siegel	Assistant Professor of Obstetrics
John E. Savage	Assistant Professor of Obstetrics
D. Frank Kaltreider	Assistant Professor of Obstetrics
Hugh B. McNally	Assistant Professor of Obstetrics
Margaret B. Ballard	Associate in Obstetrics
D. McClelland Dixon	Associate in Obstetrics
Osborne C. Christensen	Associate in Obstetrics
J. Tyler Baker, B.S., M.D.	Associate in Obstetrics
J. Duff Morrison	Associate in Obstetrics
George H. Davis	Instructor in Obstetrics
J. King B. E. Seeger	Instructor in Obstetrics
Louis C. Gaires	Instructor in Obstetrics
Kenneth B. Boyd	Assistant in Obstetrics
W. Kenneth Mansfield, Jr.	Assistant in Obstetrics
Charles H. Doeller, Jr.	Assistant in Obstetrics
Theodore Kardash	Assistant in Obstetrics
Harry McB. Beck	Assistant in Obstetrics
William A. Dodd	Assistant in Obstetrics
Irvin P. Klemkowski	Assistant in Obstetrics
Clarence W. Martin	Assistant in Obstetrics

Second Year: During the second semester lectures are given one hour weekly. Students are oriented on the normal pelvis, generative tract and the physiology of pregnancy and labor. The conduct of normal delivery and the puerperium are explained, and in general an attempt is made to prepare the student for the practical training he is to receive in his third year. Drs. Douglass and Kaltreider.

Third Year: Lectures and recitations consist of 3 hours teaching weekly and are designed to cover the anatomy more completely, especially that of the bony pelvis from an obstetrical point of view. Physiology of the endocrine system is reviewed as it relates to pregnancy and the growth and development of the impregnated ovum. Following this the pathology of pregnancy, labor and the puerperium are considered. Drs. Douglass, Reese, Siegel, Savage, Dixon and Kaltreider.

Each student is required to spend 4 days on the obstetrical service of the Baltimore City Hospitals during his junior year. Here he acts as a junior intern, observing, assisting and finally delivering normal cases under supervision. Each student attends a total of about 25 deliveries, in the majority of which he takes an active part.

Each student receives, as a member of a small group, 10 hours of instruction in palpating patients, in the clinical evaluation of the pelvis and in demonstrations of the mechanism of labor. Drs. Siegel and McNally.

Fourth Year: The instruction is entirely clinical. The "block system" is used. One-sixteenth of the class is assigned to obstetrics only for a period of 2 weeks. Students live at the University Hospital during this time and are on call 24 hours a day. They receive formal class instruction, are required to attend all rounds and staff conferences and are present at the majority of the deliveries as observers, assistants or as accoucheurs. In this way each student will actively participate in about 25 deliveries. Operative work on an obstetrical mannikin is an organized part of the course. Each student receives 6 hours of this type of instruction.

Each student spends 20 hours in the prenatal and postnatal clinics, where instructions in these fields are given.

Students assigned to obstetrics are required to attend the monthly meetings of The Committee on Maternal Mortality of Baltimore, where all maternal deaths occurring in this city are presented and discussed.

Second year	— 16	Third year	—148
Fourth year	—106	Total	—270

DEPARTMENT OF GYNECOLOGY

J. Mason Hundley, Jr.	Professor of Gynecology, and Head of the Department
Leo Brady	Assistant Professor of Gynecology
Edward P. Smith	Assistant Professor of Gynecology
William K. Diehl	Assistant Professor of Gynecology
Everett S. Diggs	Assistant Professor of Gynecology
Beverley C. Compton	Assistant Professor of Gynecology
John C. Dumler	Assistant Professor of Gynecology
Ernest I. Cornbrooks, Jr.	Assistant Professor of Gynecology
J. J. Erwin	Associate in Gynecology
Frank K. Morris	Associate in Gynecology
John T. Hibbitts	Associate in Gynecology
Kenneth B. Boyd	Associate in Gynecology
Gerald A. Galvin	Associate in Gynecology
Thomas S. Bowyer	Instructor in Gynecology
Ernest S. Edlow	Instructor in Gynecology
W. Allen Deckert	Instructor in Gynecology
H. L. Granoff	Instructor in Gynecology
Theodore Kardash	Instructor in Gynecology
Charles B. Marek	Instructor in Gynecology
Helen I. Maginnis	Instructor in Gynecology
Charles H. Doeller, Jr.	Instructor in Gynecology
William A. Dodd	Instructor in Gynecology
Harry McB. Beck	Instructor in Gynecology
William C. Duffy	Instructor in Gynecology
Joseph C. Sheehan	Instructor in Gynecology
William J. Rysanek	Instructor in Gynecology

HARRY F. KANE	Instructor in Gynecology
ROBERT B. TUNNEY	Instructor in Gynecology
THOMAS A. STEBBINS	Medical Illustrator in Oncology and Gynecology

Third Year. A course of thirty lectures and recitations is given to the whole class. In addition, a short course of lecture-demonstrations is given at the Baltimore City Hospitals, consisting of eight periods of one hour each, in which small groups of students are instructed in the fundamentals of gynecological diagnosis and examination.

Fourth Year. Operative clinics—lectures and demonstrations—are given six hours per week, for five weeks, to sections of the class.

Instruction in female urology is given. A small number of students may attend the cystoscopic dispensary which is held twice weekly.

The course in gynecology also includes instruction in the diagnosis and treatment of cancer of the generative organs. Small groups of students attend the oncological dispensary for additional work.

Third year	38 hours
Fourth year	74 hours
Total	112 hours

DEPARTMENT OF OPHTHALMOLOGY

F. EDWIN KNOWLES, JR.	Assistant Professor of Ophthalmology and Chairman of the Department
JOSEPH I. KEMLER	Associate in Ophthalmology
A. KREMEN	Associate in Ophthalmology
PAUL N. FRIEDMAN	Instructor in Ophthalmology
CLEO D. STILES	Instructor in Ophthalmology
RUBY A. SMITH	Instructor in Ophthalmology
D. J. MCHENRY	Instructor in Ophthalmology
F. E. BRUMBACK	Instructor in Ophthalmology
RICHARD J. CROSS	Instructor in Ophthalmology
FREDERICK M. REESE	Assistant in Ophthalmology

Third Year. Second semester. Dr. Friedman reviews the anatomy and physiology of the eye and discusses the methods used in making the various examinations. Errors of refraction and their effect upon the general system are explained. Weekly section work, demonstrating the use of the ophthalmoscope, is carried on during the entire session at the Baltimore Eye, Ear, and Throat Hospital.

Fourth Year. Clinics and demonstrations are given in diseases of the eye, weekly, for one year. Dr. Knowles.

The course consists of instruction in the clinic to small groups of students four days a week for four weeks. During this period, the student examines patients, diagnoses and treats various ocular diseases, under the supervision of Drs. Knowles, Smith, Brumback, McHenry, Cross, Friedman, and Manchester. Twice weekly lectures and lantern slide demonstration are given upon diseases of the eye, with particular reference to their diagnosis, management and relation to general medicine. Special lectures are given the entire class on vascular changes in the eye, refraction, cataract and neuro-ophthalmology. Certain operations are demonstrated by motion pictures.

Weekly ward classes are held at the University and Mercy Hospitals during which the eye grounds in the various medical and surgical conditions are demonstrated. Drs. Knowles, Kemler, Kremen, Smith, McHenry, Brumback, Cross, Manchester, Jeppi and Pacienza.

Third year	20 hours
Fourth year	41 hours
Total	61 hours

DEPARTMENT OF ROENTGENOLOGY

Walter L. Kilby	Professor of Roentgenology, and Head of the Department
Charles N. Davidson	Associate Professor of Roentgenology
John DeCarlo, Jr.	Assistant Professor of Roentgenology
Donald J. Barnett	Assistant Professor of Roentgenology
Edward R. Dana	Associate in Roentgenology
Robert E. Cato	Fellow in Roentgenology

During the academic year, small groups of the third and fourth year classes are given weekly instruction in the diagnostic and therapeutic uses of the Roentgen rays. An effort is made to familiarize the student with the indications for and the limitations of the Roentgen ray examinations. The history, physics and practical therapeutic application of Roentgen rays are given stressing the use of radiation as a weapon now available in a variety of disorders of the human body ranging from simple inflammations to malignant neoplastic conditions. Conferences are held with the various departments during the school year which are also open to members of the fourth year class.

Third year	8 hours
Fourth year	24 hours
Total	32 hours

DEPARTMENT OF ANAESTHESIOLOGY

Alfred T. Nelson	Professor of Anaesthesiology and Chairman of the Department
Frank J. Brady	Associate in Anaesthesiology
James Russo	Assistant in Anaesthesiology

THIRD YEAR

Lectures are given on the general physiology and pharmacology of anesthesia, with consideration of the special physiology and pharmacology of each anaesthetic agent. The methods of induction and administration of anaesthesia are discussed. The factors influencing the selection of the anaesthetic are emphasized, and the preparation and care of the anaesthetized patient are carefully explained.

These lectures are correlated with practical demonstrations, supplemented by lantern slides and motion pictures, at the University Hospital.

FOURTH YEAR

Each senior student is required to spend six hours per week for four weeks observing and administering anaesthetics in the operating room.

Third year	10 hours
Fourth year	24 hours
Total	34 hours

HISTORY OF MEDICINE

Louis A. M. Krause	Professor of Clinical Medicine

Beginning with the spring of 1942 a group of lectures on the history of medicine has been presented on selected phases and trends of the development of medical knowledge and practice. It is planned to avoid duplication of subject matter for at least four years.

These lectures are offered primarily for our students, but a cordial invitation is extended to anyone who may wish to attend.

Announcement of the lectures will be made by mail and on the bulletin board of the School of Medicine.

ART AS APPLIED TO MEDICINE

Carl Dame Clarke	Associate Professor of Art as Applied to Medicine
Thomas M. Stevenson, Jr.	Assistant in Art as Applied to Medicine
Mary Katherine Scarborough	Assistant in Art as Applied to Medicine
Jane L. Bleakley	Assistant in Art as Applied to Medicine
Raymond J. Clayton, Jr.	Assistant in Art as Applied to Medicine

This department is maintained for the purpose of supplying pictorial and plastic illustrations for visual teaching in the classrooms of the medical school and for publication in scientific periodicals. Research in prosthetics and the production of prosthetic appliances are also carried out in this department.

Special courses of instruction are given to qualified students.

POSTGRADUATE COURSES

Committee on Postgraduate Studies

Howard M. Bubert, *Chairman and Director*
Sarah Cook, *Assistant Director*

Dietrich C. Smith, *1st Vice-chairman*
L. A. M. Krause, *2nd Vice-chairman*
Milton S. Sacks, *Secretary*
Otto C. Brantigan
Frank H. J. Figge
Wetherbee Fort
John C. Krantz, Jr.
J. Morris Reese
Allen F. Voshell
John A. Wagner

Elizabeth Carroll, *Executive Secretary*
The Dean—*Ex Officio*

Calendar: Postgraduate courses are offered throughout the year.

During the past year, the Post Graduate Committee has given two extramural courses, one in Hagerstown and one in Salisbury. Enrollment was 56. The Committee will consider the request of any Maryland County Medical Society for a series of lectures to begin in the Fall of 1950. The Committee is also considering the possibility of complying with a request to give a course in the Baltimore area.

A sub-committee has been appointed to survey the hospitals in the State who desire assistance in the training of house staffs and it is hoped that in the near future, progress will be in evidence.

The Committee is hopeful of being able to offer a course in Basic Sciences in Pediatrics similar to the one presented the past two academic years in Obstetrics and Gynecology.

The following intramural courses have been continued successfully:

General Anatomy: The course is designed to prepare candidates for the examination of the American Board of General Surgery and Surgical Specialties. There is no strict rule governing either the content or duration of the course. Students may dissect a complete cadaver or any particular region in which they may be interested. Tuition arranged according to course content and duration.

Anatomy of Head and Neck as applied to the eye, ear, nose and throat. Duration 150 hours, beginning on October 1 and ending approximately February 28, comprising two periods of 4 hours per week. Tuition $75.00. Details as to the time of the individual periods will be arranged with candidates who wish to take the course.

Surgical Anatomy: The course is designed to prepare candidates for the examination in Anatomy of the American Board of Surgery. This is a ninety-hour course (3 hours a day, 2 days a week) given in conjunction with the regular sophomore medical course in surgical anatomy. Tuition $150.00.

Pathology: This course is designed to prepare candidates for certification in surgery, surgical specialties and internal medicine. Individuals will receive training in autopsy and surgical pathology. Minimum duration is full time, six months. Tuition $150.00.

Neuropathology: This course is designed to aid in meeting the requirements of the specialty boards in neurological sciences and covers basic studies in diseases of the central nervous system. Duration is six months, full time. Tuition $200.00 plus $10.00 laboratory fee.

Gynecology and Obstetrics: This is a review for general practitioners. Students attend lectures, ward rounds and clinics, and observe operations and deliveries. Full time for twelve weeks. Tuition $150.00.

Gynecology, Oncology and Female Urology: This is a review designed primarily for the general practitioner. Students attend lectures, ward rounds and clinics and observe operations. Full time for ten weeks. Tuition $125.00.

Basic Sciences as They Apply to Obstetrics and Gynecology: The course is a review of the fundamentals of the basic sciences as they apply to Gynecology and Obstetrics and recent advances in these fields. It has been approved by the Postgraduate Survey Committee of the American Board of Obstetrics and Gynecology, and may be presented for six months' credit towards certification by the Board. Duration is 20 weeks full time, beginning early in January. Tuition $375.00.

Full descriptions of these courses are available. Inquiries should be addressed to the Post Graduate Committee, University of Maryland School of Medicine, Baltimore 1, Maryland.

LECTURERS IN POSTGRADUATE MEDICINE

Thurston R. Adams
Marie A. Andersch
James G. Arnold, Jr.
*Robert E. Bauer
Joseph G. Bird
Harry C. Bowie
J. Edmund Bradley
Otto C. Brantigan
George H. Brouillet
Howard M. Bubert
T. Nelson Carey
C. Jelleff Carr
Beverley C. Compton
*Sarah Cook
Ernest I. Cornbrooks, Jr.
Edward F. Cotter
Richard J. Cross, Jr.
Francis G. Dickey
William K. Diehl
Everett S. Diggs
D. McClelland Dixon
Louis H. Douglass
John C. Dumler
J. Sheldon Eastland
Charles Reid Edwards
William L. Fearing
Frank H. J. Figge
Jacob E. Finesinger
A. H. Finkelstein
Albert E. Goldstein
Lewis P. Gundry
Frank W. Hachtel
Jerome Hartz
*Charles W. Hawkins
Harry C. Hull
J. Mason Hundley, Jr.
Harry K. Iwamoto
D. Frank Kaltreider
Theodore Kardash
Veron E. Krahl
John C. Krantz, Jr.
Arnold F. Lavenstein
C. Edward Leach
Ephraim T. Lisansky
William S. Love, Jr.
*Fred R. McCrumb
Hugh B. McNally
Howard B. Mays
Samuel Morrison
H. Whitman Newell
Frank J. Otenasek
*Robert T. Parker
Ross Z. Pierpont
Maurice C. Pincoffs
J. Morris Reese
Herbert E. Reifschneider
Dexter L. Reimann
Henry L. Rigdon
Harry M. Robinson, Sr.
Raymond C. V. Robinson
Milton S. Sacks
John E. Savage
Sidney Scherlis
Emil G. Schmidt
William B. Settle
Dietrich C. Smith
Hugh R. Spencer
Melchijah Spragins
Edwin H. Stewart, Jr.
Harry A. Teitelbaum
W. Houston Toulson
Eduard Uhlenhuth
Henry F. Ullrich
Allen Fiske Voshell
John A. Wagner
Wallace Walker
Milton J. Wilder
Walter D. Wise
Henry L. Wollenweber
Theodore E. Woodward
Robert B. Wright
George H. Yeager

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* Lecturers in Postgraduate Medicine, by invitation.

FIRST YEAR SCHEDULE

FIRST SEMESTER, SEPTEMBER 21, 1950 TO JANUARY 27, 1951

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
9.00 to 12.00	*Histology and Embryology 11-12 lecture *Bressler 2*		Orientation (Sept. 27, Oct. 4, Oct. 11) 9-10 lecture *Adm. 1*	*Histology and Embryology 11-12 lecture *Bressler 2*		Gross Anatomy A. H. 9-11
12.00 to 1.00	Lunch					
1.00 to 5.00	Gross Anatomy Lectures *A.H.* (1-2) Daily and Laboratories *Bressler 1* (2-5) Daily					

* Course ends December 21, 1950.

SECOND SEMESTER, JANUARY 29 TO JUNE 9, 1951

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
9.00 to 12.00	Laboratory — Biol. Chem. Sect. A	Laboratory — Biol. Chem. Sect. B	Laboratory — Biol. Chem. Sect. A	Laboratory — Biol. Chem. Sect. B		
12.00 to 1.00	Lunch	Lunch	Lunch	Lunch	Lunch	
1.00 to 2.00	Biol. Chem. *Adm. 1*	Biol. Chem. *Adm. 1*	Biol. Chem. *Adm. 1*	Biol. Chem. *Adm. 1*	Biol. Chem. *Adm. 1*	
2.00 to 3.00	Neuro-Physiology *Bressler 2*	Neuro-Anatomy Lecture (2-3)	Biol. Chem. Conference *Adm. 1*	Neuro-Anatomy Lecture (2-3)	Biol. Chem. Conference *Adm. 1*	
3.00 to 5.00	Psychiatry (3-5) *C. H.*	Laboratory (3-5)		Laboratory (3-5)	Neuro-Physiology *Bressler 2* (3-4)	

Locations of Lecture Halls and Laboratories:

Adm. 1—First Floor, Administration Building, Lombard and Greene Streets.
A. H.—Anatomical Hall—Upper Hall, N. E. Cor. Lombard and Greene Streets.
C. H.—Chemical Hall, Lower Hall, N. E. Cor. Lombard and Greene Streets.
Biological Chemistry Laboratory—Third Floor, 31 South Greene Street.
Bressler Research Laboratory—29 S. Greene Street.
Gross Anatomy—First Floor.
Histology and Embryology—Second Floor.
Neuro-anatomy—Second Floor.

Mid-Year Examinations—January 22-27, 1951
Final Examinations—Begin May 28, 1951

SECOND YEAR SCHEDULE

FIRST SEMESTER, SEPTEMBER 21, 1950 TO JANUARY 27, 1951

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
8.30 9.30	Physiology *Bressler 2*	Physiology *Bressler 2*	Medicine *Bressler 2*	Physiology *Bressler 2*	Physiology *Bressler 2*	Psychiatry (10–11) *Adm. 1*
9.30 to 10.30	Physiology Conference *Bressler 2*	Bacteriology *Adm. 1*		Pharmacology *Bressler 2*	Pharmacology *Bressler 2*	
10.30 to 12.30	†Bacteriology Laboratory				Neurological Diagnosis *C. H.*	
12.30	Lunch					
1.00 to 5.00	Pharm. Lect. (1–2) *Bressler 2* Pharmacology *B* Physiology *A*	Laboratory *A* Laboratory *B*		Pharmacology (1 to 4) *B* Physiology *A*	Laboratory *A* Laboratory *B*	

† Bacteriology Laboratory—Section work during the last month.

SECOND SEMESTER, JANUARY 29 TO JUNE 9, 1951

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
8.30 to 9.30	Surgery *Bressler 2*	Surgery *Bressler 2*	Surgical Anatomy *Bressler 2*	Medical Clinic *Amp.*	Physical Diagnosis *Adm. 1*	
9.30 to 10.30	Pharmacology *Bressler 2*	Pharmacology *Bressler 2*	Surgical Anatomy Laboratory *Bressler 1*		Pharmacology *Bressler 2*	Obstetrics *Bressler 2*
10.30 to 11.30	Pathology *C. H.*	Pathology *C. H.*		Pathology *C. H.*	Pathology *C. H.*	
11.30	Lunch					
12.00 to 2.00	Pathology Laboratory	Pathology Laboratory	Immunology Laboratory	Pathology Laboratory	Pathology Laboratory	
2.00 to 3.00	Surgical Anatomy *Adm. 1*	‖Immunology Laboratory		Pharmacology Laboratory *Sect. A*	Pharmacology Laboratory *Sect. B*	
3.00 to 5.00	Surgical Anatomy Laboratory *Bressler 1*		Optional period Pathology Immunology	Physical Diagnosis *Sect. B* (3.00–5.00) *U. H. D*	Physical Diagnosis *Sect. A* (3.00–5.00) *U. H. D.*	

‖ Immunology Laboratory—Section work during last two months.

Locations of Lecture Halls and Laboratories:

Adm. 1—First floor, Administration Building, Lombard and Greene Streets.
C. H.—Chemical Hall, Lower Hall, Lombard and Greene Streets.
Amp.—Wilson Memorial Amphitheatre, New University Hospital, Greene and Redwood Streets, Eighth Floor
U. H. D.—University Hospital Dispensary, Old Hospital Building.

Laboratories:
Physiology, Pharmacology, Surgical Anatomy—Bressler Building.
Bacteriology, Immunology, Pathology, Second Floor, 31 S. Greene Street.

Mid-Year Examinations—January 22–27, 1951
Final Examinations—Begin May 28, 1951

THIRD YEAR SCHEDULE

SEPTEMBER 21, 1950 TO JUNE 9, 1951

SCHEDULE 1

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
8.30 to 9.20	(Whole Class) Obstetrics *C. H.* †Gynecology April 2 to May 14	(Whole Class) Surgery *C. H.*	(Whole Class) Obstetrics *C. H.* †Gynecology Mar. 28 to May 16	(Whole Class) Surgery *C. H.*	(Whole Class) Pathology *C. H.*	(Whole Class) Surgery *C. H* †Anaesthesiology Mar. 17 to May 19 *Amp.*
9.30 to 10.00	Transfer to Baltimore City Hospitals					
10.00 to 12.00	Physical Diagnosis, Pathology, and Neurology at B. C. H.					
12.00 to 1.00	Transfer and Lunch	Transfer and Lunch	Lunch	Transfer and Lunch	Lunch	
1.00 to 2.00	(Whole Class) Nose & Throat, Urology, Otology, Proctology, Plastic Surgery *C. H.*	(Whole Class) *Gynecology †Eye—10 wks. Jan. 30 to Apr. 10 †Oncology —5 wks. Apr. 17 to May 15 *C. H.*	Medical Clinic *B. C. H.*	(Whole Class) Clinical Pathology *Bressler 2*	Obstetrical Clinic *B. C. H.*	
2.00 to 4.00	(Whole Class) Pathology Laboratory *31*		Surgery	(Whole Class) Clinical Pathology — Laboratory *Bressler 5*	Surgery	
4.00 to 5.00	(Whole Class) *Physical Diagnosis, *C. H.* †Legal Medicine †Psychiatry, *A. H.*	(Whole Class) Hygiene and Public Health *C. H.*	Orthopaedics Roentgenology *B. C. H.*		Orthopaedics *B. C. H.*	

* First Semester. † Second Semester.

SCHEDULE 2 THIRD YEAR

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
8.30 to 9.20	(Whole Class) Obstetrics *C. H.* †Gynecology April 2 to May 14	(Whole Class) Surgery *C. H.*	(Whole Class) Obstetrics *C. H.* †Gynecology Mar. 28 to May 16	(Whole Class) Surgery *C. H.*	(Whole Class) Pathology *C. H.*	(Whole Class) Surgery *C. H.* Anaesthesiology Mar. 17 to May 19 *Amp.*
9.30 to 10.20	Pediatrics *C. H.*	Medicine *C. H.*	Medicine *C. H.*	Therapeutics *C. H.*	Medicine *C. H.*	Neurology *C. H.*
10.30 to 12.30	Operative Surgery—*Bressler 6* Medical and Surgical Dispensaries—(Univ. and Mercy Sections)					
12.30 to 1.00	Lunch					
1.00 to 2.00	Same as Schedule 1		Medical Clinic *Amp.*	Same as Schedule 1	Psychiatry Dermatology U. H. Disp.	
2.00 to 4.00			Ophthalmoscopy (5 weeks) *B. E. H.* — Obstetrics (5 weeks) Univ. Hosp. Disp. — Otology (5 wks.) *Univ. Hosp. 3-C*			
4.00 to 5.00					Obstetrics *Br. 2*	

The Junior Class will be divided into two sections—A and B. Each section reports to classes in keeping with the following schedule assignment, in which the letters represent the class sections and the numerals indicate the schedules to be followed for the periods shown.

Schedule Assignment

Periods	*Sections and Schedules*
September 21, 1950 to January 20, 1951	A-1, B-2
January 29 to May 19, 1951	B-1, A-2

Locations of Lecture Halls, etc.

A. H.—Anatomical Hall, Upper Hall, N. E. Cor. Lombard and Greene Streets.
Amp.—Wilson Memorial Amphitheatre, New University Hospital, Eighth Floor.
B. C. H.—Baltimore City Hosps., 4940 Eastern Ave.
B. E. H.—Baltimore Eye, Ear and Throat Hospital, 1214 Eutaw Place.
Bressler—Bressler Building, 29 S. Greene Street.
C. H.—Chemical Hall, Lower Hall, N. E. Cor. Lombard and Greene Streets.
Univ. Hosp.—New University Hospital, Greene and Redwood Streets.
U. H. Disp.—Old Hospital Building, S. W. Cor. Lombard and Greene Streets.
31—31 South Greene Street.
Clinical Pathology Laboratory—Fifth Floor, Bressler Building.
Pathology Laboratory—31 South Greene Street, Special Rooms, Basement.

Mid-Year Examinations—January 22-27, 1951
Final Examinations—Begin May 21, 1951

FOURTH YEAR SCHEDULE

SEPTEMBER 21, 1950 TO MAY 26, 1951

CLASS DIVISIONS*

Division 1†	Division 2	Division 3†	Division 4
Medicine and Medical Specialties (8 weeks) — Neurology Cardiology Gastro-Enterology Metabolism Allergy — Roentgenology	Pediatrics (4 weeks) — Psychiatry (4 weeks)	Surgery and Surgical Specialties (8 weeks) — Urology Neuro Surgery Otology, Rhinology and Laryngology Orthopaedics — Roentgenology	Obstetrics (2 weeks) — Gynecology Oncology (2 weeks) — Dermatology & Syphilology Ophthalmology Anesthesiology (4 weeks)

STUDENT GROUP ASSIGNMENTS

1st Quarter	3rd Quarter
Sept. 21, 1950 to Nov. 18, 1950 (8 weeks)	Jan. 29, 1951 to March 31, 1951 (8 weeks)
Groups 1, 2, 3, 4 to Division 1† Groups 5, 6, 7, 8 to Division 2 Groups 9, 10, 11, 12 to Division 3† Groups 13, 14, 15, 16 to Division 4	Groups 1, 2, 3, 4 to Division 3† Groups 5, 6, 7, 8 to Division 4 Groups 9, 10, 11, 12 to Division 1† Groups 13, 14, 15, 16, to Division 2
2nd Quarter	**4th Quarter**
Nov. 20, 1950 to Jan. 27, 1951 (8 weeks)	April 2, 1951 to May 26, 1951 (8 weeks)
Groups 1, 2, 3, 4 to Division 2 Groups 5, 6, 7, 8 to Division 3† Groups 9, 10, 11, 12 to Division 4 Groups 13, 14, 15, 16 to Division 1†	Groups 1, 2, 3, 4 to Division 4 Groups 5, 6, 7, 8 to Division 1† Groups 9, 10, 11, 12 to Division 2 Groups 13, 14, 15, 16 to Division 3†

* The curriculum is arranged into 4 divisions, and the senior class into 16 groups.

† The curriculum of Divisions 1 and 3 is given at the University and Mercy Hospitals simultaneously. There are 4 groups (24 students) assigned to each division. Two groups or one half the students of each division are assigned work for 4 weeks at each hospital. Students belonging to the 2 groups having the lowest numbers in these division assignments report to the University Hospital, for the 1st 4 weeks. The 2 groups with the highest numbers report to Mercy. At the end of 4 weeks the students at the University Hospital report to Mercy and the groups at Mercy report to the University Hospital for a similar period, thus completing one division of work.

UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE AND COLLEGE OF PHYSICIANS AND SURGEONS

GRADUATES, JUNE 10, 1950

Andersen, William Andrew, A.B. Maryland
Bacon, John Louis.........New York
Bagley, Charles, III, B.S.....Maryland
Barstow, Mary Medairy, A.B..Maryland
Baumann, Wilbur Nelson, Jr..Maryland
Bisgyer, Jay Lewis. District of Columbia
Bleecker, Harry Harlan, Jr. California
Borges, Francis Joseph, B.S..Maryland
Bradshaw, Raymond, Jr., B.S..Maryland
Bronushas, Joseph Benedict Bernard, B.S.......................Maryland
Burkey, Fred Jamison......Maryland
Chelton, Louis Guy, Jr......Maryland
Coller, Jerome Joel, A.B...Maryland
Corpening, Thomas Nye, A.B. North Carolina
Cowen, Joseph Robert......Maryland
Cracraft, William Atkinson, B.S. West Virginia
Daly, Harold Lawrence, Jr...Maryland
Daly, Mirian Shamer, A.B...Maryland
Deitz, Leonard Loeb, A.B....Maryland
Demarest, Elinor Weed, A.B...Florida
Demarest, Lawrence Mann, B.S. New York
Demmy, Nicholas, B.S....Pennsylvania
Edmunds, Frederick Thomas, B.S. West Virginia
Googins, John Armel, B.S......Kansas
Greenstein, George Herbert, A.B. Maryland
Hamberry, Leonard Gerard, A.B. Maryland
Hawkins, George Kenneth, B.S. New Jersey
Healy, John Clauson....Connecticut
Henson, Stanley Willard, Jr., B.S. Maryland
Heuman, Philip Walter, B.S...Maryland
Hofsteter, Grace, A.B............Ohio
Hoyt, Irvin Gorman, A.B.....Maryland
Huffer, Sarah Virginia, B.S...Maryland
Husted, Harriet Lamont, A.B. New Jersey
Hyle, John Charles, B.S.....Maryland
Ibsen, Maxwell, A.B., M.A., D.Sc. Pennsylvania
Jensen, Roy David, B.S........Nevada
Kasik, Frank Thomas, Jr., B.S. Maryland
Kelley, Gordon William, B.S..Maryland
Knight, Virgil Ellis, A.B., B.S..Missouri
Kuehn, Frank Gustav, A.B...Maryland
Lewis, Thomas Franklin, A.B..Maryland
Lichtenberg, Joseph David, A.B. Maryland
Martin, George William, Jr..Delaware
McElvain, Wilbert Harding, B.S. Pennsylvania
Miller, Dorothea Anna, B.S...Delaware
Miller, Robert Eugene, A.B..Maryland
Neal, Hunter Shainline..Pennsylvania
Noguera, Julio Tomas, B.S..Puerto Rico
O'Malley, Joseph Edward...Maryland
Poling, Evangeline Myers, A.B., M.A. West Virginia
Rever, William Benjamin, Jr..Maryland
Reynaud, Louis Favrot, Jr...Maryland
Reynaud, Virginia Gould, B.S. Maryland
Richardson, Paul Frederick. Maryland
Righetti, Milton Raymond..California
Roth, Oliver Ralph, B.S.....Maryland
Rubin, Seymour Howard, A.B. Maryland
Rudy, Norman Edward....California
Sandler, Robert, B.S........Maryland
Shepherd, Frederick Parker, A.B. Maryland
Simmons, Frederic Rudolph, B.S. Maryland
Sires, William Oscar, B.A....Maryland
Sklar, Allen Leon..........Maryland
Smith, Morton, B.S..........Maryland
Sosnowski, Andrew Raymond, B.S. Maryland
Spaulding, Raymond Charles, Jr., B.S. Florida
Startzman, Henry Hollingsworth, Jr. Maryland
Storm, Mary Elizabeth, A.B..Maryland
Sulka, Casmir Michael.......Illinois
Thibadeau, Robert Tondorf, B.S. Maryland
Thompson, William Wesley, B.S. Maryland
Toms, Bate Carpenter, Jr., B.S. North Carolina
Upton, Albert Louie, A.B...California
Van Goor, Kornelius, B.S...New Jersey
Vicens, Enrique Alberto...Puerto Rico
White, Fowler Felix, B.S...Connecticut
Wilson, Clifford Edward, Jr. Connecticut
Wolf, Ernest Simon.........Maryland
Yeager, William Howard, Jr., B. S. Maryland

HONORS

University Prize Gold Medal

Louis Guy Chelton, Jr.

Certificate of Honor

Morton Smith
Julio Tomas Noguera
John Armel Googins
John Clauson Healy
Ernest Simon Wolf

The Dr. A. Bradley Gaither Memorial Prize

Stanley Willard Henson, Jr.

The William D. Wolfe Memorial Prize and Certificate of Proficiency

Stanley Willard Henson, Jr.

INTERNSHIPS—GRADUATES OF JUNE 10, 1950

July 1, 1950—June 30, 1951

Andersen, William Andrew	Union Memorial Hospital, Baltimore, Md.
Bacon, John Louis	U. S. Marine Hospital, Norfolk, Va.
Bagley, Charles, III	University Hospital, Baltimore, Md.
Barstow, Mary Medairy	Mercy Hospital, Baltimore, Md.
Baumann, Wilbur Nelson, Jr.	University Hospital, Baltimore, Md.
Bisgyer, Jay Lewis	Gallinger Municipal Hospital, Washington, D. C.
Bleecker, Harry Harlan, Jr.	Los Angeles County Hospital, Los Angeles, Calif.
Borges, Francis Joseph	University Hospital, Baltimore, Md.
Bradshaw, Raymond, Jr.	University Hospital, Baltimore, Md.
Bronushas, Joseph Benedict Bernard	University Hospital, Baltimore, Md.
Burkey, Fred Jamison	Mercy Hospital, Pittsburgh, Pa.
Chelton, Louis Guy, Jr.	U. S. Marine Hospital, Baltimore, Md.
Coller, Jerome Joel	Sinai Hospital, Baltimore, Md.
Corpening, Thomas Nye	University of Texas Medical Branch Hospitals, Galveston, Texas
Cowen, Joseph Robert	Wayne County General Hospital, Detroit, Mich.
Cracraft, William Atkinson	Union Memorial Hospital, Baltimore, Md.
Daly, Harold Lawrence, Jr.	West Baltimore General Hospital, Baltimore, Md.
Daly, Miriam Shamer	West Baltimore General Hospital, Baltimore, Md.
Deitz, Leonard Loeb	Sinai Hospital, Baltimore, Md.
Demarest, Elinor Weed	University Hospital, Baltimore, Md.
Demarest, Lawrence Mann	Methodist Hospital, Brooklyn, N. Y.
Demmy, Nicholas	Good Samaritan Hospital, Portland, Ore.
Edmunds, Frederick Thomas	Union Memorial Hospital, Baltimore, Md.
Googins, John Armel	University of Kansas Medical Center, Kansas City, Kan.
Greenstein, George Herbert	Sinai Hospital, Baltimore, Md.
Hamberry, Leonard Gerard	Mercy Hospital, Baltimore, Md.
Hawkins, George Kenneth	Mountainside Hospital, Montclair, N. J.
Healy, John Clauson	St. Agnes Hospital, Baltimore, Md.
Henson, Stanley Willard, Jr.	U. S. Marine Hospital, Baltimore, Md.

Heuman, Philip Walter	Mercy Hospital, Baltimore, Md.
Hofsteter, Grace	Mercy Hospital, Canton, Ohio
Hoyt, Irvin Gorman	University Hospital, Baltimore, Md.
Huffer, Sarah Virginia	University Hospital, Baltimore, Md
Husted, Harriet Lamont	Baltimore City Hospitals, Baltimore, Md.
Hyle, John Charles	West Baltimore General Hospital, Baltimore, Md.
Ibsen, Maxwell	Santa Clara County Hospital, San Jose, Calif.
Jensen, Roy David	Franklin Hospital, San Francisco, Calif.
Kasik, Frank Thomas, Jr.	Mercy Hospital, Baltimore, Md.
Kelley, Gordon William	U. S. Naval Hospital, St. Albans, L. I., N. Y.
Knight, Virgil Ellis	Good Samaritan Hospital, Portland, Ore.
Kuehn, Frank Gustav	Mercy Hospital, Baltimore, Md.
Lewis, Thomas Franklin	St. Vincent's Hospital, Bridgeport, Conn.
Lichtenberg, Joseph David	West Baltimore General Hospital, Baltimore, Md.
Martin, George William, Jr.	Delaware Hospital, Wilmington, Del.
McElvain, Wilbert Harding	Allentown Hospital, Allentown, Pa.
Miller, Dorothea Anna	St. Vincent's Hospital, Bridgeport, Conn.
Miller, Robert Eugene	Baltimore City Hospitals, Baltimore, Md.
Neal, Hunter Shainline	Reading Hospital, Reading, Pa.
Noguera, Julio Tomas	San Juan City Hospitals, San Juan, Puerto Rico.
O'Malley, Joseph Edward	St. Francis Hospital, Hartford, Conn.
Poling, Evangeline Myers	Union Memorial Hospital, Baltimore, Md.
Rever, William Benjamin, Jr.	Mercy Hospital, Baltimore, Md.
Reynaud, Louis Favrot	Crawford W. Long Memorial Hospital, Atlanta, Ga.
Reynaud, Virginia Gould	Crawford W. Long Memorial Hospital, Atlanta, Ga.
Richardson, Paul Frederick	Mercy Hospital, Baltimore, Md.
Righetti, Milton Raymond	Permanente Foundation Hospital, Oakland, Calif.
Roth, Oliver Ralph	Mercy Hospital, Baltimore, Md.
Rubin, Seymour Howard	Sinai Hospital, Baltimore, Md.
Rudy, Norman Edward	Hospital of the Good Samaritan, Los Angeles, Calif.
Sandler, Robert	Sinai Hospital, Baltimore, Md.
Shepherd, Frederick Parker	U. S. Marine Hospital, Baltimore, Md.
Simmons, Frederic Rudolph	Walter Reed General Hospital, Washington, D. C.
Sires, William Oscar	St. Vincent's Hospital, Bridgeport, Conn.
Sklar, Allen Leon	St. Vincent's Hospital, Bridgeport, Conn.
Smith, Morton	Michael Reese Hospital, Chicago, Ill.
Sosnowski, Andrew Raymond	St. Agnes Hospital, Baltimore, Md.
Spaulding, Raymond Charles, Jr.	University Hospital, Baltimore, Md.
Startzman, Henry Hollingsworth, Jr.	Baltimore City Hospitals, Baltimore, Md.
Storm, Mary Elizabeth	
Sulka, Casmir Michael	St. Luke's Hospital, Chicago, Ill.
Thibadeau, Robert Tondorf	Providence Hospital, Washington, D. C.
Thompson, William Wesley	Milwaukee County Hospital, Milwaukee, Wis.
Toms, Bate Carpenter, Jr.	Union Memorial Hospital, Baltimore, Md.
Upton, Albert Louie	Letterman General Hospital, San Francisco, Calif.
Van Goor, Kornelius	University Hospitals, Iowa Citp, Iowa
Vicens, Enrique A.	Clinica Quirurgica Dr. Pila, Ponce, Puerto Rico
White, Fowler Felix	Mercy Hospital, Baltimore, Md.
Wilson, Clifford Edward, Jr.	Waterbury Hospital, Waterbury, Conn.
Wolf, Ernest Simon	Jewish Hospital, Cincinnati, Ohio
Yeager, William Howard, Jr.	Garfield Memorial Hospital, Washington, D. C.

MATRICULANTS

SENIOR CLASS, SEPTEMBER 22, 1949 TO JUNE 10, 1950

Andersen, William Andrew, A.B., *The Johns Hopkins University*..........Maryland
Bacon, John Louis, *University of Buffalo*..............................New York
Bagley, Charles, B.S., *Loyola College, 1945*..............................Maryland
Barstow, Mary Medairy, A.B., *College of Notre Dame of Maryland, 1943*.....Maryland
Baumann, Wilbur Nelson, *University of Maryland*.......................Maryland
Bisgyer, Jay Lewis, *University of Pennsylvania*..................District of Columbia
Bleecker, Harry Harlan, Jr., *University of California*..................California
Borges, Francis Joseph, B.S., *University of Maryland, 1948*................Maryland
Bradshaw, Raymond, Jr., B.S., *University of Maryland, 1943*...............Maryland
Bronushas, Joseph Benedict Bernard, B.S., *Loyola College, 1946*..........Maryland
Burkey, Fred Jamison, *St. Francis College*..............................Maryland
Chelton, Louis Guy, Jr., *Gettysburg College*.............................Maryland
Coller, Jerome Joel, A.B., *The Johns Hopkins University, 1946*............Maryland
Corpening, Thomas Nye, A.B., *University of North Carolina*............North Carolina
Cowen, Joseph Robert, *The Johns Hopkins University*...................Maryland
Cracraft, William Atkinson, B.S., *Virginia Military Institute, 1939*...West Virginia
Daly, Harold Lawrence, Jr., *University of Maryland*...................Maryland
Daly, Miriam Shamer, A.B., *Goucher College, 1946*.......................Maryland
Deitz, Leonard Loeb, A.B., *University of North Carolina, 1946*.............Maryland
Demarest, Elinor Weed, A.B., *Randolph-Macon Woman's College, 1946*......Florida
Demarest, Lawrence Mann, B.S., *Bowdoin College, 1945*..................New York
Demmy, Nicholas, B.S., *University of Pittsburgh, 1942*................Pennsylvania
Edmunds, Frederick Thomas, B.S., *Hampden-Sydney College, 1941*......West Virginia
Googins, John Armel, B.S., *University of Maryland, 1948*..................Kansas
Greenstein, George Herbert, A.B., *The Johns Hopkins University, 1941*....Maryland
Hamberry, Leonard Gerard, A.B., *Loyola College, 1940*..................Maryland
Hawkins, George Kenneth, B.S., *Upsala College, 1943*..................New Jersey
Healy, John Clauson, *University of Connecticut*........................Connecticut
Henson, Stanley Willard, Jr., B.S., *Oklahoma A&M College, 1945*.........Maryland
Heuman, Philip Walter, B.S., *University of Michigan, 1941*................Maryland
Hofsteter, Grace, A.B., *College of Wooster*................................Ohio
Hoyt, Irvin Gorman, A.B., *St. Johns College, 1939*........................Maryland
Huffer, Sarah Virginia, B.S., *University of Maryland, 1940*..............Maryland
Husted, Harriet Lamont, A.B., *Wells College, 1944*......................New Jersey
Hyle, John Charles, B.S., *Loyola College, 1942*...........................Maryland
Ibsen, Maxwell, A.B., *The Johns Hopkins University, 1939; A.M., University of Pennsylvania, 1940*..................................Pennsylvania
Jensen, Roy David, B.S., *University of Nevada, 1941*.......................Nevada
Kasik, Frank Thomas, B. S., *University of Maryland*.......................Maryland
Kelley, Gordon William, B.S., *University of Maryland, 1938*..............Maryland
Knight, Virgil Ellis, A.B., B.S., *University of Missouri, School of Medicine, Sept. 1946 to June 1948*..Missouri
Kuehn, Frank Gustav, A.B., *University of North Carolina, School of Medicine, Sept. 1946 to June 1948*..Maryland
Lewis, Thomas Franklin, Jr., A.B., *Western Maryland College, 1941*........Maryland
Lichtenberg, Joseph David, A.B., *The Johns Hopkins University, 1943*......Maryland
Martin, George William, Jr., *University of Delaware*......................Delaware
McElvain, Wilbert Harding, B.S., *Grove City College, 1943*............Pennsylvania
Miller, Dorothea Anna, B.S., *Washington College, 1946*.................Maryland
Miller, Robert Eugene, A.B., *Bridgewater College, 1943*..................Maryland
Neal, Hunter Shainline, *Vanderbilt University*.....................Pennsylvania
Noguera, Julio Tomas, B.S., *University of Puerto Rico*.................Puerto Rico
O'Malley, Joseph Edward, *Colby College*..................................Maryland
Poling, Evangeline, A.B., *West Virginia University, 1945; A.M., Columbia University, 1946*..West Virginia
Rever, William Benjamin, Jr., *Cornell University*.........................Maryland
Reynaud, Louis Favrot, Jr., *Emory University*...............................Illinois
Reynaud, Virginia Gould, B.S., *Nazareth College, 1941*..................New York
Richardson, Paul Frederick, *Baylor University*.............................Maryland
Righetti, Milton Raymond, *University of California*.....................California

Roth, Oliver Ralph, *University of Maryland*............................Maryland
Rubin, Seymour Howard, A.B., *The Johns Hopkins University, 1946*........Maryland
Rudy, Norman Edward, *Fresno State College*..........................California
Sandler, Robert, B.S., *University of Maryland, 1943*......................Maryland
Shepherd, Frederick Parker, A.B., *Syracuse University, 1935*............Maryland
Simmons, Frederic Rudolph, Jr., B.S., *Loyola College, 1946*................Maryland
Sires, William Oscar, B.A., *Western Maryland College, 1947*.............Maryland
Sklar, Allen Leon, *Western Maryland College*............................Maryland
Smith, Morton, B.S., *University of Maryland, 1943*........................Maryland
Sosnowski, Andrew Raymond, B.S., *Loyola College, 1945*..................Maryland
Spaulding, Raymond Charles, Jr., B.S., *John B. Stetson University, 1943*.....Florida
Startzman, Henry Hollingsworth, Jr., *Loyola College*..................Maryland
Storm, Mary Elizabeth, A.B., *Swarthmore College, 1946*..................Maryland
Sulka, Casmir Michael, *Loyola College*.................................Illinois
Thibadeau, Robert Tondorf, B.S., *University of Maryland, 1945*..........Maryland
Thompson, William Wesley, B.S., *Washington College, 1938*..............Maryland
Toms, Bate Carpenter, Jr., B.S., *University of North Carolina, School of Medicine, Sept. 1946 to June 1948*..........................North Carolina
Upton, Albert Louis, A.B., *University of California, 1942*................California
Van Goor, Kornelius, B.S., *Calvin College*..........................New Jersey
Vicens, Enrique Alberto, *University of Puerto Rico*....................Puerto Rico
White, Fowler Felix, B.S., *Trinity College, 1942*....................Connecticut
Wilson, Clifford Edward, Jr., *Bowdoin College*.....................Connecticut
Wolf, Ernest Simon, *University of Maryland*...........................Maryland
Yeager, William Howard, Jr., B.S., *University of Maryland, 1944*.........Maryland

JUNIOR CLASS, SEPTEMBER 22, 1949 TO JUNE 10, 1950

Ager, Law Lamar, B.S., *University of North Carolina, School of Medicine, September 1947 to June 1949*......................................North Carolina
Arthur, Robert Key, Jr., B.S., *Mercer University, 1948*..................Georgia
Barthel, John Paul, *Western Maryland College*..........................Maryland
Beardsley, Earl Miller, *University of Maryland*.........................Maryland
Bell, Arthur Keith, A.B., *Oberlin College, 1947*.........................Maryland
Bilder, Joseph, Jr., B.S., *University of Akron, 1944*.........................Ohio
Birely, Beverly Robert, *University of Maryland*.........................Maryland
Blades, Nancy, A.B., *Connecticut College, 1947*........................New Jersey
Bossard, John Wesley, A.B., *Duke University, 1947*......................Maryland
Brannon, John Vandale, *Fairmont State Teachers College*............West Virginia
Buell, John Russell, Jr., *University of Maryland*........................Maryland
Christopher, Russell Lee, A.B., *Bowdoin College, 1947*..............Massachusetts
Clemmens, Raymond Leopold, B.S., *Loyola College, 1947*.................Maryland
Coffman, Kaohlin Miner, A.B., *Western Maryland College, 1947*......Pennsylvania
Cohen, Solomon, A.B., *University of Denver, 1947*.......................Maryland
Curanzy, Raymond Ralph, B.S., *Juniata College, 1947*..............Pennsylvania
Deckelbaum, Joseph, B.S., *University of Maryland, 1947*.................Maryland
Dettbarn, Ernest Albert, B.S., *Randolph-Macon, 1947*...................Maryland
Donner, Leon, B.S., *State Teachers College, 1942*........................Maryland
Dudley, Winston Clark, A.B., *Oberlin College, 1943*...............Massachusetts
Dunn, George Mitchell, Jr., *George Washington University*....District of Columbia
Dunigan, William Andrew, A.B., *University of North Carolina, School of Medicine, September 1947 to June 1949*........................North Carolina
Edwards, David Everett, *University of Maryland*................District of Columbia
Edwards, William Hunter, Jr., A.B., *Johns Hopkins University, 1940*......Maryland
Esmond, William George, B.S., *University of Maryland, 1940*.............Maryland
Evans, Otis Druell, Jr., B.S., *Davidson College, 1947*..............North Carolina
Ferguson, Charles Kirkpatrick, *Muskingum College*..................Kansas
Fitzgerald, Joseph Carroll, *Middlebury College*........................Maryland
Fullilove, Jack, *University of Georgia*..................................Georgia
Gallaher, James Patrick, *West Virginia University*.................West Virginia
Garcia-Palmieri, Mario Ruben, *University of Puerto Rico*..............Puerto Rico
Gardner, Francis, Sidney, Jr., A.B., *University of North Carolina, School of Medicine, September 1947 to June 1949*...................North Carolina
Gates, John Butler, *University of Wisconsin*...........................Wisconsin

Gordon, Benjamin Dichter, *Amherst College*..........................New York
Hatem, Frederick Joseph, *Georgetown University*.......................Maryland
Hopkins, Robert Charles, B.S., *Allegheny College, 1946*............Pennsylvania
Iten, George Joseph, A.B., *Goshen College, 1946*....................California
Johnson, Frederick Miller, B.S., *University of Maryland, 1943*...District of Columbia
Johnson, Wallace Edward, *Wesleyan University*....................New Hampshire
Kaschel, Paul Edward, A.B., *Wheaton College, 1947*..................New Jersey
Kindt, Willard Freed, *Muhlenberg College*.......................Pennsylvania
King, Victor Francis, *University of Maryland*..........................Maryland
Kipnis, David Morris, A.B., *Johns Hopkins University, 1945*.............Maryland
Knipp, Harry Lester, *Loyola College*...................................Maryland
Kramer, Howard Calvin, *University of Maryland*.......................Maryland
Lamb, William Eugene, B.S., *University of Florida, 1947*..................Florida
Lanning, Theodore Reuney, B.S., *Springfield College, 1944*.............New Jersey
Leibman, Jack, A.B., *Johns Hopkins University, 1947* ....Maryland
Ley, Leo Henry, Jr., *Mt. St. Mary's College of Maryland*..................Maryland
Lister, Leonard Melvin, *Loyola College*.............................Maryland
MacDonald, James Melvin, B.S., *Loyola College, 1947*....................Maryland
McFadden, Earl Boyd, B.S., *University of Maryland, 1947*................Maryland
McFadden, John William, *Mt. Union College*..............................Ohio
McGrady, Charles Winifred, Jr., A.B., *Emory University, 1947*..........Georgia
McGrady, Kathleen Reilly, B.S., *Long Island University, 1947*.........New York
Mendez-Bryan, Ricardo Tomas, *University of Puerto Rico*..............Puerto Rico
Metcalf, John Shelby, Jr., *University of California*..................California
Mosser, Robert Schaaf, B.S., *University of Maryland, 1949*..............Maryland
Mutter, Arthur Zelig, *Franklin & Marshall College*.....................Maryland
Myers, Donald Johnson, B.S., *Bethany College, 1934*........................Ohio
Nygren, Edward Joseph A.B., *Western Maryland College, 1947*............Maryland
Orth, John Stambaugh, *University of Maryland*.........................Maryland
Packard, Douglas Richard, *University of Maryland*.....................Maryland
Pencheff, Dorris Marie, A.B., *University of California, 1946*..........California
Perilla, Frank Robert, B.S., *University of Maryland, 1947*..............Maryland
Perry, Henry David, Jr., A.B., *Emory University, 1947*...................Florida
Reeser, Guy McClelland, Jr., A.B., *Western Maryland College, 1947*......Maryland
Reeves, Henry Gray, Jr., B.S., *Wake Forest College, 1947*............North Carolina
Rex, Eugene Braiden, *Vanderbilt College*...............................Colorado
Reynolds, Georgia, A.B., *Western Maryland College, 1947*................Maryland
Richardson, Aubrey DeVaughn, B.S., *University of North Carolina, School of Medicine, Sept. 1947 to June 1949*........................North Carolina
Rombro, Marvin Jay, A.B., *Bucknell University, 1947*....................Maryland
Rowland, Harry Shepard, Jr., A.B., *Wesleyan University, 1947*..........New Jersey
Saavedra-Amador, Armando, *University of Puerto Rico*..................Puerto Rico
Scott, Roger, David, *University of Virginia*............................Florida
Scully, John Thorsen, *Indiana University*...............................Indiana
Shea, William Harold Holland, B.S., *Loyola College, 1947*................Maryland
Sherry, Samuel Norman, B.S., *University of Maryland, 1949*..............Maryland
Simmons, Leslie Dale, B.S., *West Virginia University, School of Medicine Sept. 1947 to June 1949*.................................West Virginia
Sipple, Edward N., *Earlham College*...................................Maryland
Skipton, Roy Kennedy, B.S., *University of Maryland, 1942*................Maryland
Solomon, David Milton, *University of Maryland*.........................Maryland
Stone, John Hoskins, B.S., *University of Maryland*......................Maryland
Sutton, Julian Theoplous, A.B., *University of North Carolina, School of Medicine, September 1947 to June 1949*........................North Carolina
Tobias, Richard Boyd, B.S., *Bucknell University, 1947*..................Pennsylvania
Twigg, Homer Lee, Jr., *University of Maryland*..........................Maryland
Udel, Melvin, A.B., *University of Maryland, 1947*.........................Maryland
Venrose, Robert James, A.B., *University of Michigan, 1946*....................Ohio
Watson, Charles Polk, Jr., A.B., *West Virginia University, 1947*......West Virginia
Weekley, Robert Dean, B.S., *Heidelberg College, 1947*........................Ohio
Wheelright, Harvey Prarse, *Brigham Young University*.........................Utah
Williams, Charles Ray, A.B., *Gettsburg College, 1947*....................Maryland
York, Shelley Clyde, Jr., B.S., *Guilford College, 1947*................North Carolina

York, Thomas Luther, A.B., *University of North Carolina, School of Medicine Sept. 1947 to June 1949*..........North Carolina
Young, Calvin Lessey, A.B., *Haverford College, 1947*..........Maryland

SOPHOMORE CLASS, SEPTEMBER 22, 1949 TO JUNE 10, 1950

Adams, Charles Baird, Jr., *University of Maryland*..........Maryland
Adelstein, Benjamin Alfred, A.B., *University of Pennsylvania, 1948*..........Pennsylvania
Adkins, Charles Glen, *West Virginia University*..........West Virginia
Ahlquist, Richard Elmer, Jr., A.B., *Stanford University, 1948*..........Washington
Alderman, George Carl, Jr., B.S., *Loyola College, 1949*..........Maryland
Andrews, James William, B.S., *Muskingum College, 1948*..........Ohio
Atkins, Raymond Melvin, *University of Maryland*..........Maryland
Bakal, Daniel, B.S., *Loyola College, 1948*..........Maryland
Baker, Timothy Danford, A.B., *Johns Hopkins University, 1948*..........Maryland
Bergofsky, Edward Harold, *University of Maryland*..........Maryland
Berrios, Osvaldo, *University of Puerto Rico*..........Puerto Rico
Bridges, Jack Arthur, *University of Maryland*..........Maryland
Brooks, James Burch, B.S., *Loyola College, 1948*..........Maryland
Brown, William Morris, Jr., A.B., *Mercer University, 1948*..........Georgia
Carroll, John Edward, Jr., *Loyola College*..........Maryland
Clyman, Daniel, B.S., *University of Maryland, 1948*..........Maryland
Cohen, Phin, *Duke University*..........Maryland
Culpepper, Stuart Pitner, B.S., *University of Georgia, 1948*..........Florida
Devlin, Andrew Joseph, B.S., *Gonzaga University, 1948*..........Washington
DiGiovanni, Anthony John, A.B., *Johns Hopkins University, 1948*..........Maryland
Douglas, Robert Arnold, B.S., *J. B. Stetson University, 1948*..........Florida
Douglass, Robert Corl, Jr., B.S., *University of Toledo, 1947* Ohio
Dunford, William Stanley, Jr., B.S., *Brigham Young University, 1948*..........Utah
Eakle, Burke Eldridge, *West Virginia University*..........West Virginia
Eckert, Herbert Lewis, *University of Maryland*..........Maryland
Egbert, Lawrence Deems, Jr., A.B., *Johns Hopkins University, 1948*..........Maryland
Elgin, Lee William, Jr., *University of Florida*..........Florida
Elliott, Charles Stanley, *Emory University*..........Florida
Feski, Joseph Paul, *University of Pittsburgh*..........Pennsylvania
Fine, Jack, *University of Maryland*..........Maryland
Foley, Michael Joseph, *West Virginia University*..........West Virginia
Fritz, Louis Albert, B.S., *Loyola College, 1948*..........Maryland
Gebhardt, Robert William, *University of Maryland*..........Maryland
Gislason, Paul Harold, A.B., *University of North Dakota, 1948*..........North Dakota
Gonzalez, Luis Felipe, *University of Maryland*..........Puerto Rico
Gore, Jay Calvin, A.B., *Western Maryland College, 1948*..........Maryland
Grabill, James Rodney, *Georgetown University, American University*..........Maryland
Graybill, Clarence Edward, *University of Maryland*..........Maryland
Greco, William Richard, *University of Maryland*..........Maryland
Grubb, Robert Alvin, *University of Maryland*..........Maryland
Hankoff, Leon Dudley, *University of Maryland*..........Maryland
Heimer, William Lenox, B.S., *University of Maryland, 1948*..........Maryland
Holmes, Charles Martin, *University of Miami*..........Maryland
Houck, Romulus Vance, Jr., *University of Maryland*..........Maryland
Hudgins, William Baird, A.B., *Emory University, 1948*..........Georgia
Hunter, DeWitt Talmade, Jr., B.S., *U. S. Naval Academy, 1945*..........Virginia
Hunter, Laurel Mullins, A.B., *Westhampton College, 1948*..........Maryland
Hyatt, Irvin, *University of Maryland*..........Maryland
Keller, Franklin Lloyd, A.B., *Gettysburg College, 1945*..........Maryland
Kline, Frank Menefee, *University of Maryland*..........Maryland
Knell, Joseph Anthony, Jr., A.B., *Loyola College, 1948*..........Maryland
Krager, John Martin, B.S., *Loyola College, 1948*..........Maryland
Kramer, Irvin, *New York University*..........Maryland
Krieger, Morton Morris, *University of Maryland*..........Maryland
Lapp, Herbert Walter, *Seton Hall College*..........New Jersey
Lightbody, Charles Harry, A.B., *Colby College, 1948*..........Maine
Love, Robert George, B.S., *Massachusetts State College, 1947*..........Massachusetts
Mathews, William Allen, *Westminster College, Wittenberg College*..........Ohio

McKay, John Nelson, *Ohio Wesleyan University, Gettysburg College*	Maryland
Olsen, Richard Young, A.B., *University of California, 1948*	California
Perry, Benton Bloch, B.S., *University of Chicago, 1947*	Maryland
Pillsbury, William Andrew, Jr., *University of Oregon, Loyola College*	Maryland
Potter, Vance Edward, *University of Maryland*	Maryland
Rabinowich, Malcolm Lee, *University of Maryland*	Maryland
Ramirez-Santisteban, Gilberto, *University of Puerto Rico*	Puerto Rico
Rappeport, Jonas Ralph, *University of Maryland*	Maryland
Rasmussen-Taxdal, David Samuel, *University of Maryland*	Pennsylvania
Reed, Julian Ward, *University of Maryland*	Maryland
Rosson, William Daniel, *University of Maryland*	Maryland
Schimmel, Bella Faye, B.S., *University of Michigan, 1948*	Maryland
Sharrett, John Oliver, *University of Virginia*	Maryland
Shoff, Mahlon James, A.B., *University of Delaware, 1948*	Delaware
Sindler, Richard Arnold, A.B., *Johns Hopkins University, 1948*	Maryland
Slager, Ursula Traugott, A.B., *Wellesley College, 1948*	Maryland
Smith, Bolyston Dandridge, *West Virginia University*	West Virginia
Smith, George Herbert, A.B., *Clark University, 1948*	Maine
Smoot, Aubrey Cannon, Jr., *University of Delaware*	Delaware
Spritz, Norton, A.B., *Johns Hopkins University, 1948*	Maryland
Stambler, Alvin Abraham, *University of Maryland*	Maryland
Stovall, Robert McRae, Jr., *Idaho State College*	Idaho
Trace, Robert James, *University of Wisconsin*	Wisconsin
Vicens, Carlos Nathaniel, B.S., *University of Puerto Rico, 1948*	Puerto Rico
Wallace, Scott, Pyper, A.B., *University of Utah, 1948*	Utah
Walsh, Harry Martin, B. S., *Washington College, 1948*	Maryland
Warren, Bryan Pope, Jr., *University of Maryland*	Maryland
Weeks, Howard Nelson, B.S., *Franklin & Marshall, 1948*	Maryland
Wildberger, Albert John, A.B., *Western Maryland College, 1948*	Maryland
Wolfel, Donald Anthony, *University of Maryland*	Maryland
Wolverton, William Roger, A.B., *West Virginia University, 1948*	West Virginia

FRESHMAN CLASS, SEPTEMBER 22, 1949 TO JUNE 10, 1950

Arp, Louis Croft, Jr., A.B., *State University of Iowa, 1949*	Illinois
Baldwin, Richard Moffett, B.S., *Loyola College, 1949*	Maryland
Banks, James Leroy, Jr., B.S., *Furman University, 1949*	South Carolina
Bastian, Grace Arlene, B.S., *College of Notre Dame of Maryland, 1949*	Maryland
Beck, George Henry, A.B., *Western Maryland College, 1949*	Maryland
Berkow, Robert, B.S., *University of Maryland, 1949*	Maryland
Blumenfeld, Samuel, A.B., *University of Maryland, 1949*	Maryland
Boggs, James Ernest, A.B., *West Virginia University, 1949*	West Virginia
Bove, Joseph Richard, *University of Maryland*	New Jersey
Brinkley, George Ross, Jr., A.B., *West Virginia University, 1949*	West Virginia
Burkart, Thomas Joseph, B.S., *Loyola College, 1949*	Ohio
Byerly, Walter Hough, A.B., *Johns Hopkins University, 1949*	Maryland
Byrnes, Bernard Joseph, Jr., B.S., *Loyola College, 1949*	Maryland
Carroll, Charles Fisher, Jr., B.S., *Guilford College, 1949*	North Carolina
Carroll, Marcus Newman, Jr., A.B., *Johns Hopkins University, 1949*	Florida
Carter, Donald Sweetser, *Duke University*	Maryland
Clift, John Vinton, B.S., *Hampden-Sydney College, 1949*	Maryland
Codington, John Bonnell, B.S., *Davidson College, 1949*	North Carolina
Cohen, Jerome, *University of Maryland*	Maryland
Colon-Lugo, Salomon, *University of Puerto Rico*	Puerto Rico
Cook, Arthur John, A.B., *Emory University, 1949*	Georgia
Custer, Robert Stockton, B.S., *Loyola College, 1949*	Maryland
Doerner, Wyand Francis, Jr., B.S., *Mt. St. Mary's College, 1949*	Maryland
Dowell, Rowland Judson, *University of Utah*	Utah
Dumler, John Donald, *University of Maryland*	Maryland
Edlow, Jules Bernard, *University of Maryland*	Maryland
Eye, Harry Luke, A.B., *West Virginia University, 1949*	West Virginia
[1]Fernandez-Quintana, Agustin, *University of Puerto Rico*	Puerto Rico
Firor, Hugh Valentine, *University of Georgia*	Georgia
Flax, Leonard Harold, *University of Maryland*	Maryland

Frieman, Sylvan, B.S., *University of Maryland, 1949*	Maryland
Garlock, Frederick Adams, *University of Maryland*	Maryland
Garrison, Joseph Shermer, 3d, A.B., *Western Maryland College, 1949*	Maryland
Gevas, George, B.S., *University of Maryland, 1949*	Maryland
Gillotte, Joseph Patrick, *University of Maryland*	Connecticut
[1]Glick, Leonard Barry, *University of Maryland*	Maryland
Goldstein, Robert Bruce, *University of Maryland*	Maryland
Greil, Louis Corneilus, Jr., *University of Maryland*	Maryland
Hartman, John McMaster, A.B., *West Virginia University, 1949*	West Virginia
Heisse, John Wilbur, Jr., A.B., *Johns Hopkins University, 1949*	Maryland
Henson, Kenneth Clifford, B.S., *Salem College, 1949*	Maryland
Herbert, Thomas Franklyn, *Johns Hopkins University*	Maryland
Hess, Charles Franklin, A.B., *McPherson College, 1949*	Pennsylvania
Himmelwright, George Overton, *University of Maryland*	Maryland
Holder, William Lewis, A.B., *Emory University, 1949*	Georgia
Jones, Henry Albert, Jr., *Johns Hopkins University*	Maryland
Jones, Thomas Lawson, *University of Maryland*	Maryland
Judge, Walter Francis, B.S., *University of Notre Dame, 1949*	New Jersey
Kaese, Werner Erich, B.S., *Albright College, 1949*	Pennsylvania
Karn, William Nicholas, Jr., *Alfred University*	Maryland
Kingsbury, Robert Coburn, *University of Maryland*	Maryland
Kiser, William Sites, *University of Maryland*	West Virginia
Knight, Arthur Clyde, *University of Montana*	Montana
Lambert, Robert Young, A.B., *Emory University, 1949*	South Carolina
Langrall, Harrison Morton, Jr., A.B., *Johns Hopkins University, 1949*	Maryland
Lee, Benjamin Buck, A.B., *Johns Hopkins University, 1949*	Maryland
Leighton, Herbert Houck, *Western Maryland College*	Maryland
Levine, Robert Lee, *University of Maryland*	Maryland
Longo-Cordero, Rafael, *University of Puerto Rico*	Puerto Rico
Madge, Gordon Evans, *College of William and Mary*	Maryland
McCurry, Don Meredith, Jr., *University of Maryland*	Maryland
McFadden, Archibald Weems, *University of Maryland*	Virginia
Mendelsohn, Ronald Edward, B.S., *University of Maryland, 1949*	Maryland
Metcalf, John William, Jr., *Kent State University*	Ohio
Middleton, Benjamin Martin, *University of Maryland*	Maryland
Might, James Edward, A.B., *Wittenberg College, 1949*	Ohio
Miles, Leslie Roy, Jr., A.B., *West Virginia University, 1949*	Pennsylvania
Miller, George Henry, *University of Maryland*	Maryland
Miller, Norman Louis, *University of Maryland*	Maryland
Novey, Riva Esther, A.B., *Goucher College, 1935*, M.S., *Smith College, 1938*	Maryland
Palmisano, Joseph Frank, *University of Maryland*	Maryland
Peck, George Charles, A.B., *Johns Hopkins University, 1949*	Maryland
Powder, James Richard, A.B., *Johns Hopkins University, 1949*	Maryland
Read, James Lamar, B.S., *University of Maryland, 1949*	Maryland
Richardson, Joe Bernal, A.B., *Emory University, 1949*	Georgia
Richmond, Lewis Cass, Jr., *Duke University*	West Virginia
Rogers, Edwin Lee, A.B., *Lenoir Rhyne College, 1949*	South Carolina
Rowe, James Earle, Jr., *University of Maryland*	Maryland
Schindler, Richard Elias, *University of Maryland*	Maryland
Shuman, Joseph Ellyn, B.S., *Washington College, 1949*	Maryland
Singleton, Robert Tiffany, *University of Maryland*	Maryland
Skaggs, Thomas Wayne, B.S., *University of Miami, 1947*	Florida
Slasman, William Howry, Jr., A.B., *Johns Hopkins University, 1949*	Maryland
Smith, William Meredith, Jr., B.S., *Mt. St. Mary's College, 1949*	Maryland
Spudis, Edward Verhines, *University of Maryland*	Washington, D. C.
Stauffer, John Craig, A.B., *Princeton University, 1949*	Maryland
Templeton, William Pendleton, *University of Maryland*	Maryland
Treiber, Martin William, B.S., *University of Moryland, 1948*	Maryland
Troxel, James Roy, A.B., *Johns Hopkins University, 1948*	Maryland
Tyson, William Alva Way, B.S., *Dickinson College, 1949*	Maryland
Vance, Arnold Leonard, *University of Maryland*	Maryland
Walter, Herbert Guy, Jr., *University of Nevada*	Nevada
Watson, Jack Thomas, B.S., *U. S. Naval Academy, 1945*	West Virginia

Weaver, Karl Hanna, *West Virginia University*....................West Virginia
Webster, Joel Stoops, *University of Maryland*..........................Maryland
Weeks, Harry Stephen, Jr., A.B., *West Virginia University, 1949*......West Virginia
Weiner, Israel Howard, A.B., *Johns Hopkins University, 1949*.............Maryland
[1]Wood, Donald Orem, *University of Maryland*..........................Maryland

INTRAMURAL POSTGRADUATE STUDENTS

July 1, 1949 to June 30, 1950

General Anatomy

Morgan, Jack C., M.D.	Baltimore, Maryland	*University of Maryland*

Surgical Anatomy

Alecce, Andrew A., M.D.	Baltimore, Maryland	*University of Maryland*
Alvarez, Joseph, M.D.	Baltimore, Maryland	*Temple University*
Biehl, Harold P., M.D.	Baltimore, Maryland	*University of Maryland*
Bolton, Houck E., M.D.	Baltimore, Maryland	*University of Oklahoma*
Borkovic, George Wm., M.D.	Vanport, Pa.	*Johns Hopkins University*
Carrier, Marshall H., Jr. M.D.	Keyser, W. Va.	*Johns Hopkins University*
Chambers, Robert G., M.D.	Owings Mills, Md.	*Duke University*
Conant, James S., M.D.	Glenn Dale, Maryland	*Yale University*
Dolce, Joseph R., M.D.	Buffalo, New York	*University of Buffalo*
Herold, Paul G., M.D.	Baltimore, Maryland	*University of Maryland*
Johnson, Robert W., III, M.D.	Brooklandville, Md.	*Johns Hopkins University*
Kehoe, Moylan B., M.D.	Flint, Michigan	*St. Louis University*
Macht, Allan Harris, M.D.	Baltimore, Maryland	*University of Maryland*
Martin, Richard Gordon, M.D.	Baltimore, Maryland	*Temple University*
Pines, Samuel R., M.D.	Baltimore, Maryland	*University of Maryland*
Pitchford, Clyde, M.D.	Baltimore, Maryland	*Stanford Medical School*
Virusky, Edmund Joseph, M.D.	Freeland, Pa.	*University of Maryland*
Watt, Charles H., Jr., M.D.	Thomasville, Ga.	*Johns Hopkins University*

Basic Sciences as They Apply to Obstetrics and Gynecology

Fisher, Edward J., M.D.	Dallastown, Pa.	*Jefferson Medical College*
Hack, Rudolf William, M.D.	San Bernardino, Calif.	*Illinois Medical College*
Linthwaite, Robert F., M.D.	Melrose, Mass.	*Los Angeles College of Medical Evangelists*
Steinberg, Murray, M.D.	Baltimore, Maryland	*N. Y. Univ. College of Medicine*

Pathology Section of Basic Sciences as Applied to Gynecology and Obstetrics

Richter, Christian F., M.D.	Baltimore, Maryland	*University of Maryland*

Gynecology and Obstetrics

Athanassiadou, Panagota, M.D.	Salonika, Greece	*University of Salonika*

Neuropathology

Ayd, Frank J., Jr., M.D.	Baltimore, Maryland	*University of Maryland*

Pathology

Morgan, Jack C., M.D.	Baltimore, Maryland	*University of Maryland*

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[1] Did not complete the year.

Experimental Surgery

From St. Joseph's Hospital:

Alecce, Andrew A., M.D.	Baltimore, Maryland	*University of Maryland*

From Baltimore City Hospitals:

Crabb, Gordon, M.D.	Essex, Maryland	*Columbia University*
Curtis, Hugh P., M.D.	Ontario, Calif.	*University of California*
Cunnick, Paul C., M.D.	Baltimore, Md.	*Iowa University*

From Mercy Hospital:

Smelzer, Rennert, M.D.	Baltimore, Maryland	*University of Maryland*
Thomas, Clyde D., Jr., M.D.	Clendenin, W. Va.	*University of Maryland*

From University Hospital:

Brumback, Frank E., M.D.	Hagerstown, Md.	*University of Maryland*
Evans, John E., Jr., M.D.	North Carolina	*University of Maryland*
Mansberger, Arlie R., Jr., M.D.	Baltimore Maryland	*University of Maryland*
McNinch, James R., M.D.	Pennsylvania	*University of Maryland*
White, John P., III, M.D.	Baltimore, Maryland	*University of Maryland*

EXTRAMURAL POSTGRADUATE STUDENTS

Physicians Attending 1949–1950 Extension Lectures

Course Given at Washington County Hospital, Hagerstown, Maryland:

Aldis, Henry, M.D.	Shepherdstown, W. Va.	*University of Kansas*
Beachley, Jack H., M.D.	Hagerstown, Md.	*University of Maryland*
Bell, R. A., M.D.	Hagerstown, Md.	*University of Maryland*
Brewer, David R., M.D.	Clear Spring, Md.	*Not Given*
Campbell, Robert v.L.	Hagerstown, Md.	*Duke University*
Ditto, E. W., Jr., M.D.	Hagerstown, Md.	*Jefferson Medical College*
Dwyer, J. R., M.D.	Hagerstown, Md.	*University of Maryland*
Hirshman, Philip J., M.D.	Hagerstown, Md.	*University of Virginia*
Hoffman, Lloyd A., M.D.	Hagerstown, Md.	*Johns Hopkins University*
Hoachlander, Eldon G., M.D.	Hagerstown, Md.	*Temple University*
Hornbaker, John H. M.D.	Hagerstown, Md.	*University of Maryland*
Keadle, Robert F., M.D.	Hagerstown, Md.	*University of Maryland*
Kneisley, B. B., M.D.	Hagerstown, Md.	*University of Pa.*
Kohler, G. A., M.D.	Smithsburg, Md.	*University of Maryland*
Lai, Daniel G., M.D.	Cascade, Md.	*Rush Medical School*
Layman, Wm. T., M.D.	Hagerstown, Md.	*University of Maryland*
LeVan, Gerald W., M.D.	Boonsboro, Md.	*Jefferson Medical College*
Lusby, Frank F., M.D.	Hagerstown, Md.	*University of Maryland*
Novenstein, Sidney, M.D.	Funkstown, Md.	*University of Maryland*
Poole, Ernest F., M.D.	Hagerstown, Md.	*Jefferson Medical College*
Schoolman, L. R., M.D.	Frederick, Md.	*University of Maryland*
Shaffer, Lester M., M.D.	Hancock, Maryland	*University of Geneva*
Shealy, Walter H., M.D.	Sharpsburg, Md.	*University of Maryland*
Stauffer, Ralph S., M.D.	Hagerstown, Md.	*Jefferson Medical College*
Sullivan, E. Margaret, M.D.	Hagerstown, Md.	*University of Rochester*
Tabler, H. E., M.D.	Hancock, Maryland	*University of Maryland*
Wanger, Halvard, M.D.	Shepherdstown, W. Va.	*University of Illinois*
Wells, Samuel Robert, M.D.	Hagerstown, Md.	*University of Maryland*
Wishard, Walter H., M.D.	Waynesboro, Pa.	*Jefferson Medical College*
Wroth, Peregrine, Jr., M.D.	Hagerstown, Md.	*Johns Hopkins University*
Yeager, Howard W., M.D.	Hagerstown, Md.	*University of Maryland*
Young, Ralph F., M.D.	Williamsport, Md.	*University of Maryland*
Zimmerman, Ira M., M.D.	Williamsport, Md.	*University of Maryland*

Course Given at Peninsula General Hospital, Salisbury, Maryland:

Becker, R. H., M.D.	Bridgeville, Del.	*Hahnemann Medical College*
Briele, Henry A., M.D.	Salisbury, Md.	*University of Maryland*
Critcher, C. E., M.D.	New Church, Virginia	*Medical College of Virginia*
Emrich, William, M.D.	Hebron, Maryland	*University of Maryland*
Fisher, Wm. H., Jr., M.D.	Salisbury, Md.	*Duke University*
Gilmore, David J., M.D.	Salisbury, Md.	*University of Pa.*
Gramse, Fred R., M.D.	Salisbury, Md.	*George Washington Univ.*
Gray, Wm. D., M.D.	Salisbury, Md.	*University of Pa.*
Huxtable, T. R., Jr., M.D.	Princess Anne, Md.	*College of Med. Evangelists*
LaMar, Robert C., M.D.	Snow Hill, Md.	*University of Maryland*
Lewis, Frank R., M.D.	Willards, Maryland	*University of Maryland*
Long, Wm. B., M.D.	Salisbury, Md.	*University of Maryland*
Morgan, Wm. C., M.D.	Salisbury, Md.	*Duke University*
Moyer, Charles M., M.D.	Laurel, Del.	*Temple University*
Robbins, Herman A., M.D.	Berlin, Maryland	*University of Graz, Austria*
Sartorius, Norman E., Jr., M.D.	Pocomoke City, Md.	*University of Maryland*
Sartorius, Norman E., Sr., M.D.	Pocomoke City, Md.	*University of Maryland*
Sembly, G. Herbert, M.D.	Salisbury, Md.	*Howard University*
Smith, Stedman W., M.D.	Salisbury, Md.	*McGill University*
Townsend, Francis J., Jr., M.D.	Ocean City, Md.	*University of Maryland*
Wolff, Eldridge H., M.D.	Cambridge, Md.	*University of Maryland*

SUMMARY OF STUDENTS

September 20, 1949 to June 10, 1950

Medical Students	*Male*	*Female*	*Total*
Senior Class	71	9	80
Junior Class	91	4	95
Sophomore Class	87	2	89
Freshman Class	96	2	98
Medical Students	345	17	362
Intramural Post-Graduate Students	38	0	38
Extramural Post-Graduate Students	52	2	54
	435	19	454

GEOGRAPHICAL DISTRIBUTION OF MEDICAL STUDENTS

September 20, 1949 to June 10, 1950

California	8
Colorado	1
Connecticut	4
Delaware	3
District of Columbia	6
Florida	11
Georgia	9
Idaho	1
Illinois	3
Indiana	2
Kansas	2
Maine	2
Maryland	202
Massachusetts	3
Missouri	1
Nevada	2
New Hampshire	1
New Jersey	10
New York	5
North Carolina	14
North Dakota	1
Ohio	12
Pennsylvania	15
South Carolina	2
Utah	4
Virginia	1
Washington	2
West Virginia	21
Wisconsin	2
United States Possessions	
Puerto Rico	12

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The University of Maryland School for Nurses was established in the year 1889. Since that time it has been an integral part of the University of Maryland, coming under the same government. It is a non-sectarian school, the only religious services being morning prayers.

The University Hospital is a general hospital containing about 435 beds. It is equipped to give young women a thorough course of instruction and practice in all phases of nursing.

Programs offered: The programs of study of the school are planned for two groups of students: (a) the five-year group, (b) the 36-month group.

The requirements for admission to the five-year program of the School of Nursing are the same as for other colleges of the University. The completion of this course entitles the student to the degree of Bachelor of Science from the University of Maryland and to the diploma of the University Hospital School of Nursing.

The requirements for admission to the 36-month program are the satisfactory completion of an academic course in an approved high school. The completion of this course entitles the student to the diploma of the University of Maryland School of Nursing.

Applications and catalogues may be obtained from the Director of the School of Nursing, University Hospital, Baltimore 1, Md.

MERCY HOSPITAL SCHOOL OF NURSING

The Mercy Hospital School of Nursing, established in 1899 and incorporated on December 23, 1901, is approved by the National Nursing Accrediting Service. It is an integral part of the Mercy Hospital and is under the same government. Mercy Hospital, a general hospital containing 350 beds, affords exceptional advantages for the education of nurses, and offers opportunities for a thorough and varied experience. By its institutional affiliation with the University of Maryland, it secures professors who give to the student the results of their training and experience in the fields of the medical and related sciences.

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